Valuing archaeology; exploring the reality of the heritage management of England's wetlands

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

(Signature) ……

For Kate and Amy

Abstract

This work primarily examines the management of wet-preserved archaeological sites in England, through an exploration of value and analysis of current management approaches. The aim is to explore whether the current policy frameworks, in particular the role of preservation *in situ*, can provide a sustainable future for wet-preserved archaeological sites. This work further seeks to conceptualise the modelling of sustainability, preservation and management decision making in wetland archaeological sites.

Looking at the last 40 year of wetland research through the work of the large-scale wetland survey projects, this work initially considers the current understanding of wet archaeological sites in England. It also examines aspects of heritage management through the legislative and policy frameworks and their legacy. This work considers the implications that legislative and policy positions have for the management of wetland archaeological sites and examines the theoretical concepts that underpin them. This includes exploring reflective management, the development of research frameworks, and scoring mechanisms for the designation of sites. It also looks at broader constructs of value through the concepts of cultural and economic values.

Three existing archaeological sites, a ringwork at Borough Fen near Peterborough, a marsh fort at Sutton Common near Doncaster and a triple post-alignment near Beccles, will be presented as case studies. These sites serve as examples of how the management of sites has been approached. The results of the case study analysis are used to develop a series of conceptual models looking firstly at sustainability and preservation *in situ*, and, secondly at preservation, value and decision making.

The study concludes that the presumption in favour of preservation *in situ* can be challenging for wet preserved archaeological sites. Deterioration of the preservation environment can in some cases produce a similar decline in significance. Preservation *in situ* may therefore not be the most appropriate option for archaeological sites in wetlands.

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Abbreviations and Acronyms

ALSF	Aggregates Levies Sustainability Fund
AOD	Above Ordnance Datum
AHM	Archaeological Heritage Management
ARM	Archaeological Resource Management
CAP	Common Agricultural Policy
CA	Countryside Agency
CC	Countryside Commission
CCT	Carstairs Countryside Trust
CRM	Cultural Resource Managment
CSS	Countryside Stewardship Scheme
CVM	Contingent Valuation Method
DCLG	Dept. Communities and Local Government
DCMS	Dept. Culture Media and Sport
dGPS	digital Global Positioning System
DEFRA	Dept for Environment, Farming and Rural Affairs
DoE	Dept. of Environment
EH	English Heritage
EIA	Environment Impact Assessment
ELS	Entry Level Scheme
ES	Environmental Stewardship
ESA	Environmentally Sensitive Area
GIS	Geographical Information System
HEA	Historic Environment Adviser
HECA	Historic Environment Countryside Adviser
HER	Historic Environment Record
HLC	Historic Landscape Character
HLF	Heritage Lottery Fund
HLS	Higher Level Scheme
HMEW	Heritage Management of England's Wetlands
HPM	Hedonic Pricing Method
HWP	Humber Wetlands Project

ICAHM	International International Committee on Archaeological Heritage Management
ICOMOS	International Council on Monuments and Sites
IDB	Internal Drainage Board
IUCN	International Union for the Conservation of Nature
JCA	Joint Character Area
LCA	Landscape Character Area
MAFF	Ministry of Agriculture Fisheries and Food
MAREW	Monuments at Risk in England's Peatlands
MARISP	Monuments at Risk in Somerset's Peatlands
MARS	Monuments at Risk Survey
MAP2	Management of Archaeological Projects 2
MoRPHE	Management of Research Projects in the Historic Environment
MPP	Monuments Protection Programme
NCC	Nature Conservancy Council
NE	Natural England
NMR	National Monuments Record
NWWS	North West Wetlands Project
OS	Ordnance Survey
PPG15	Planning and Policy Guidance note 15 (historic buildings)
PPG16	Planning and Policy Guidance note 16 (archaeology)
PPS5	Planning and Policy Statement 5
RCHME	Royal Commission for Historic Monuments in England
RSPB	Royal Society for the Protection of Birds
SCC	Suffolk County Council
SCCAS	Suffolk County Council Archaeological Service
SHINE	Selected Heritage Inventory
SM	Scheduled Monument
SMR	Sites and Monuments Record
SNHD	Selected National Heritage Dataset
SRVP	Suffolk River Valleys Project
SSSI	Site of Special Scientific Interest
TCM	Travel Cost Method
UNESCO	United Nations Education Scientific and Cultural Organisation

WARP Wetland Archaeological Research Project

Chapter 1: Introduction

1.0 Background

The management of wetlands has often been seen as the preserve of nature conservation. Likewise the implementation of protective measures or the restoration of wetland environments has tended to focus on biodiversity and the preservation of the species that exist on the surface (see Gearey *et al* 2010: 32). Wetlands are also culturally rich and are widely recognised for their significance by archaeologists because of their ability to preserve evidence about our past, in particular through the organic artefacts and ecofact that can be preserved within them (see Coles 1995: 1). In my experience the archaeological elements and the importance of historic peatlands are not always fully considered during the planning or implementation of management actions, and it has been difficult to ensure the cultural value of wetlands is fully recognised in both policy and strategy development. There have, however, been some positive changes since English Heritage published a summary of wetland management in 1995 (*ibid*). This is, for example, shown more recently with the heritage sector strongly represented in the creation of the multi-agency Wetland Vision and the ***International Union for Conservation of Nature*** (IUCN) UK Peatlands Programme (see www.wetlandvision.org.uk and www.iucn-uk-peatlandprogramme.org).

Yet, whilst advocacy for the cultural heritage aspects of wetlands may have begun to have an impact on the management of wetlands in the context of nature conservation, there are still ongoing issues with the wider preservation of wet sites, and this is evidenced through recent analysis provided through the Monuments at Risk in England's Wetlands survey (MAREW; see Van de Noort *et al* 2002). Two particular research problems provide the basis for this research. The first problem is how archaeological sites in wetlands relate to the policies and legislation that exist for heritage management in the UK, and whether the current mechanisms are effective in protecting the cultural resource of wetlands. The second concerns the theoretical drivers that underpin policy, and whether these can be applied and adapted to develop better management of these important sites in the future.

1.1 Personal statement

My interests in wetland environments began with palaeoenvironmental work undertaken during my undergraduate course at the University of Manchester. I went on to work as a Research Assistant at Manchester and worked to develop projects based on the wetlands of Greater Manchester, the Peak District and also in the west of Ireland. I have subsequently been involved in the study and research of archaeology in wet environments for the last 20 years. After I left Manchester I went on to supervise an extensive developer-funded excavation of a small basin mere known as Church Moss, near Davenham in Cheshire (see Brayshay *et al* 1995, Howard-Davis and Buxton 2000: 4). The site was identified as an area of high archaeological potential, with good preservation of pollen and plant macro-fossils, and with a focus on land surfaces dating to the Mesolithic period. The excavation of this site established an early precedent, in that the wet deposits were treated in the same way as other archaeological remains within the development control process. In 1997 I joined the Humber Wetlands Project, as a Field Officer and Research Assistant at Hull University before moving to join the University of Exeter in 2000 as a Research Fellow. Here I undertook research for the MAREW project and also helped to develop English Heritage's 'Strategy for Wetlands' (see Van de Noort *et al;* Olivier and Van de Noort 2002). With colleagues, I went on to develop a series of more detailed projects, aimed at providing solutions to specific issues that had been highlighted in the MAREW study. These include the development of a wetland specific GIS system, and the Heritage Management of England's Wetlands (HMEW) project. Subsequently I have held a number of curatorial positions, firstly at Suffolk County Council as a development control archaeologist and then more recently in my current position as Inspector of Ancient Monuments for English Heritage. I have first-hand knowledge of all the sites used as case studies in this work, and the experience of working at these sites has contributed much to my understanding of the state of the resource. For example, I supervised on the excavation at Sutton Common during my time at Exeter University, and in my role at Suffolk I was the

curatorial officer responsible for the excavation at Beccles. I also now manage the ringwork at Borough Fen on behalf of English Heritage.

The research for this thesis has therefore developed from my own personal and research interest, but also from my understanding of how the situation for waterlogged archaeology has changed the last 30 years. My role in these projects and the experience of managing wet-preserved archaeological sites through the planning and statutory process has had a direct bearing on the direction of my thinking. Many of the ideas were developed during this period have become part of this thesis.

The turning point for me however came in July 2000, which marked both the end of the Humber Wetlands Project and the culmination of a 30-year and a £7 million investment by English Heritage and its predecessors into wetland research (Van de Noort *et al* 2002). Towards the end of the Humber Wetlands Project, it became clear that there was a need to change direction and take wetland research into new areas. My view at that time was that, although many new sites had been identified, relatively few advances had been made in the long-term management of the wetland landscapes in which these sites were located. In spite of the scale of the English Heritage initiative, archaeological and heritage issues in wetlands also lacked recognition when set against the Natural Environment objectives, and to some extent wetlands were still, to some extent, a marginal sub-section within the discipline of archaeology itself.

1.2 Aims, objectives and Structure

This thesis therefore has two aims. The first aim is to examine whether the management framework that currently exists in England can provide a sustainable long-term future for wet-preserved archaeological sites. The second aim is to provide a broader conceptualisation of the position of wet sites, through the modelling of sustainability, preservation and management decision making. The research undertaken to achieve these aims includes an examination of three known archaeological sites which will be presented as case studies (see also Table 1.1 below). Because legislation and policies differ in other part of the United Kingdom, the analysis will be limited to sites in England. The case studies have been selected to provide a number of

different scenarios by which to explore the aims. These are all examples of known wetland sites, or sites with a demonstrable wet component and have similarities in terms of period and form. This will ensure that broad comparisons can be made between the case studies.

Chapter.	Theme
Chapter 1	Introductory chapter, aims and objectives.
Chapter 2.	Archaeology and wetlands
Chapter 3.	Legislation, Monuments at Risk, and heritage management.
Chapter 4.	Management and archaeological sites in wetlands, introducing reflective management, the Monuments Protection Programme and cultural value
Chapter 5.	Introduction to the case study model, and economic value.
Chapter 6	Case study 1: Ringwork at Borough Fen
Chapter 7	Case study 2: Sutton Common
Chapter 8.	Case study 3: Beccles post alignment
Chapter 9.	Analysis of results from case study models, modelling sustainability, preservation and decision making
Chapter 10	Conclusions

Table 1.1 Summary breakdown of thesis by chapter

To examine further the two overarching aims, a number of specific objectives have been defined:

The first objective is to evaluate our understanding of wetlands and the archaeological sites that are situated within them through a literature survey. This will, in particular, look at how the discovery of sites over the last 30 or 40 years has changed our understanding of the value of the resource. This period is significant because it has seen a number of developments within the field of wetland archaeology, notably the development of the Somerset Levels Project, and the expansion of large-scale wetland surveys to encompass other areas of the country (see Van de Noort 2002). The completion of these surveys in 2000 has also seen a shift in the theoretical and political approach, which has moved away from survey, and towards an emphasis on management. This will be presented in Chapter 2.

The second objective is to explore a broader understanding of heritage management through an examination of the existing legislative and policy frameworks and their legacy. This will be presented in Chapter 3.

The third objective is to explore the implications that the legislative and policy positions have for the management of wetland archaeological sites. Chapter 4 will present the theoretical positions that underpin the legislation and current policy development, and will introduce concepts including reflective management, research

frameworks, scoring mechanisms for the designation of sites as well as the broader discourse which has been brought together under the theme of cultural value.

The fourth objective is to investigate the economic drivers in relation to cultural value. This focuses, in particular, on the mechanisms for assessing the economics of cultural assets, but also the incentivisation approach developed by Natural England for Environmental Stewardship. This economic reality is brought together in a model which has been developed specifically in relation to this work, and this is presented in Chapter 5.

The results forthcoming from these considerations are explored and tested in three case studies, which are presented in Chapters 6, 7 and 8. The case studies will be evaluated through the mechanisms explored in the previous chapters, in particular through the remit of the research frameworks, through the designation criteria and through an evaluation of the concept of cultural value. Finally the case studies will be assessed against the economic value model presented in Chapter 5.

In Chapter 9, the result of the case studies are compared, and conceptualised in a series of models representing the sustainability and site preservation in wetlands. These models are designed to test the constraints placed on wetland sites by policies such as preservation *in-situ*, in particular, in relation to their economic and cultural vales. This will establish a concluding discussion in Chapter 10 on whether sustainability of archaeological sites in wetlands is ultimately possible, and whether a consensus can be reached on the best approach to the management of wet archaeological sites in the future.

Chapter 2 Archaeology and wetlands: The discovery of waterlogged archaeological sites, an analysis of the finds and the survey of wetland survey and from the last 40 years

2.0 Introduction

One of the most stimulating things about wetland archaeology is the way it links to other branches of the discipline; moreover the archaeology found in wet environments has many interfaces with a wide academic community. In particular, there is a scientific and environmental archaeological agenda, delivered through understanding and interpreting past environments, environmental change, and through understanding the burial environments and the preservation of sites. Likewise, because of the rare preservation and the unusual nature of the finds, the sites from wetlands provide key elements of our understanding of past human agency, and therefore can play a role in the development of theoretical and social scientific constructs. Because this agenda is so wide, however, the structure and focus of the first analysis section, which is presented in this chapter, will need to focus on subject areas relevant to this research. As discussed in the introductory chapter, the focus of the overall analysis is designed to gain a better understanding of the management of archaeological sites. It is therefore necessary to focus on the mechanisms for the discovery of sites, in particular the survey of wetlands and our understanding of how and where these resources have been identified. This chapter looks primarily at the last thirty to forty years of wetlands survey, site recording and the key archaeological discoveries in that time. The history of wetland archaeology is presented first; the second background section (Chapter 3) is devoted to archaeological management.

It is also worth stating that this overview will focus predominantly on the literature concerned with lowland sites with a wet component in England. It recognises that there are equally important wetland and peatland systems with significant archaeological deposits in the rest of the British Isles (e.g. Bell and Neumann 1997, Barber and Crone 1993). These areas are outside the scope of this work because the analysis here focuses primarily on sites which are subject to English policies and legislation. The case studies used in later chapters are all English examples, and the legislation on which

protection is based, or the agencies upon which they are dependant for funding and maintenance, are specifically English. Elsewhere in the United Kingdom, significant differences are apparent in legislation, heritage governance and agricultural practices (see O' Neil 2007). Whilst comparisons and a review of the relative values and practices of the English, Welsh, Scottish or Northern Irish policies are interesting and valuable (e.g. Hunter and Ralston 1993: 35), consideration of these discussions is not part of the aim of this study and is outside the scope of the research.

Within the United Kingdom, there are large wetland systems such as Fenn's and Whixall Mosses that are situated across national borders. Likewise the Severn Estuary has significant deposits on both the English and Welsh sides which have been extensively studied. Some of these examples will be included here because the research has been co-ordinated across the borders and forms a consistent corpus of work (e.g. Bell and Neumann 1997: 95–113). References to Fenn's and Whixhall Mosses will also be included because it is one continuous natural system, irrespective of imposed political boundaries (see Berry *et al* 1996: additional map). Equally, these wetlands are under the joint stewardship of the equivalent natural environment bodies in England (now Natural England) and the Countryside Council for Wales (Berry *et al* 1996:1). Both Mosses were also included in the Shropshire volume of the North West Wetlands Survey (Leah *et al* 1998).

There are also large and important raised mire systems and upland blanket bog in the north, the northeast, northwest and the southwest of England. Significant archaeological sites, remains and internationally important mire deposits are also well documented from these environments. English Heritage has, for example, funded survey work to map this resource systematically (e.g. Quatermain *et al* 2007). Again, however, this type of environment is largely outside of the scope of this research. Mires and wetlands systems in upland areas for example formed under very different circumstances, and have different management requirements. Issues and sometimes policies are therefore often different.

Wetland archaeology, and to some extent environmental archaeology, have often been approached by academics and professional archaeologists almost as a separate discipline, as opposed to a sub-set, or sub-discipline of

archaeology. The division has created problems over how archaeologists as a group and profession view wetlands and the advances made in these environments, and in reverse the cultural study of wetlands has become isolated from wider debates. This fragmentation has only recently been identified as a significant problem within the profession (Van de Noort and O' Sullivan 2006: 10). But criticisms have been also levelled at wetland archaeologists by others within the field (*ibid:* 12).

The need for greater integration both externally and internally is still apparent, which suggests that the segregation and separation of wetland archaeologists and their research is still a significant problem. Although this scenario is beginning to change, this divide is reflected in the research and the equivalent literature. The analysis of the known research presented here also reflects this divide to some extent

2.1 The story of wetland archaeology

Discoveries have been documented from wetland environments and other wet places for a hundred years or more. Unusual objects that lay buried in peat lands and low-lying areas were often only located during activities such as peat cutting, dredging, ditch cutting and drainage works. These finds were often treated as curiosities, with the evidence recorded in local papers, antiquarian journals and the transactions of local societies. In the Somerset Levels for example, the first dated mention of the 4000-year-old trackway that became known as the Abbot's Way was in 1834 (Coles and Coles 1986: 24). Similar types of record exist throughout the country; however identifying a trackway was unusual even for this period, and the majority of the finds recovered were stone or metal objects, such as tools and weaponry. Regional databases such as county Historic Environments Records (HER) or a research assessment which has produced an inventory of regional finds will have many such references (e.g. Van de Noort and Davies 1993). It is often the tools and weaponry that has survived in the archaeological archive from those early discoveries, because these were well preserved and easily identifiable as ancient objects (see Wait 1985). Groups of objects and pieces of metal work found close together became identified with terms such as 'hoard'. Hoards had a sense of the mysterious, with unusual decorated

objects, weapons and high status personal effects such as jewellery recovered. Patterns of repeat deposition in wetlands, such as the metal work dredged up over time from the Thames (e.g. Thomas 1999) or the structured laying out of objects such also those noted from the Appleby Carr in Lincolnshire are particular examples (Davey and Knowles 1972, Van de Noort *et al* 1998). Once in a while, even more unusual discoveries were made and notable curiosities such as human remains would be recorded. As well as adding a macabre air to proceedings, these findings were often more widely reported and investigated. The discovery of Lindow Man in 1984 was widely hailed at the time as 'Britain's first bog body' (Turner 1999: 230). It is clear however from Glob's (1965) work in Europe, and Turner's work, amongst others, in Britain (e.g. Turner and Scaife 1995; Turner 1999), that many bog bodies have been identified throughout the last three hundred years. A combination of literary searches and new scientific analysis on bog body remains in Britain has also been able to bring together many obscure references to form a corpus of knowledge (Turner 1999: 231). This shows just how many recorded locations of human remains there have been in the past. Turner (*ibid*), for example, cites references from as early as 1700 as part of an archive of 106 human remains recorded from wet contexts, of which 22 had surviving tissue. In an example of a lowland raised mire such as Whixhall Moss, there are three records relating to human remains, all from antiquarian sources and found respectively in 1867, 1889 and 1876 (Turner and Penny 1996: 46).

Easily identifiable metal finds, with perhaps the functionality of a bronze axe or the beauty of a golden torc, or bog bodies with the unusual connotations of their burial environment, are the most noted examples of the types of finds noted in the antiquarian records. There are however many other recorded examples of stray finds or unusual discoveries made in rivers and wetlands all over the British Isles and the Irish mainland over a period of centuries, including logboats and other organic finds.

Antiquarian references are therefore clearly an important archive of knowledge. In Yorkshire during the survey work for the Humber Wetlands Project for example, regional types of sources were often the first port of call. An example used by the project as an avenue for targeting resources and

developing new avenues of research would be Reginald Smith's (1911) 'Lake dwellings in Holderness'. This was a notable work for its time because of its 'academic' approach to the recording of the archaeology, and the context and type of finds published. Even 80 years after Smith had recorded these sites; the early works provided a considerable impetus for new research, including field survey and excavation. New outcomes included revised analysis of the on-site context and material culture, followed by re-interpretation of these sites in context (e.g. Van de Noort 1995: 323 – 34; Chapman *et al* 2000: 105 – 174; Van de Noort 2004: 60 – 66; Fletcher and Van de Noort 2007: 313 - 323).

Although as mentioned above objects and finds had been recorded from wetland areas for many years, the processes and contexts that allowed these unusual objects to survive were not well understood. In particular there was little or no understanding of the nature of these environments that allowed wooden objects and other organic artefacts to survive. Rigorous academic methodology or systematic survey of wetlands in an archaeological context was uncommon, therefore finds made in the early 19th century such as the Brigg Raft (McGrail 1981) merely hinted at the potential and importance of wetlands. It is both the way in which people in the past interacted with these environments and the way in which the context preserved organic finds, that needed to be better understood.

In terms of European antiquarian enquiry in the 19th century, there are perhaps four key early texts relating to the beginnings of the wetland archaeology. Fredrich Keller's (1878) book 'The lake dwellings of Switzerland and other parts of Europe' was probably the earliest wetland archaeological text. This has been seen as the stimuli for Robert Monroe's (1882) study of lake dwellings or 'crannogs' in Scotland, a similar treatise based in Ireland by Wood-Martin (1886) and also Bulleid and Gray's work at Glastonbury (e.g.1911). Monroe and Wood-Martin provided data through survey; however Kellers' original work was followed by Bulleid and Gray's at the Glastonbury Lake Village site and then later at Meare Village showed what exciting results awaited a detailed excavation. It was these sites that set the early standard for excavation and recording of wet sites in England.

Arthur Bulleid was brought up in Somerset, near Glastonbury, and became acquainted with its antiquities at an early stage. John Coles and Bryony Coles (1986: 26) noted, for example, that he had reported on the trackway known as the Abbot's Way as early as 1883 when he would have been about 20 years of age. Although he trained as a doctor in Bristol, he was more interested in geology and archaeology and spent many years noting and recording the sites and strata of the Somerset Levels. It was he who first identified the mounds and bumps which when excavated formed the Glastonbury Lake Village, and he is also associated with the other great Iron Age Somerset lake settlement at Meare (Bulleid and Gray 1948). Bulleid began excavating the Glastonbury site in 1893, but work was interrupted between 1898 and 1904, and when it was restarted, Bulleid was joined by a H. St. George Gray, a Fellow of the Society of Antiquaries. Together they went on to excavate, plan, record and published in full one of the most unusual wetland sites in England. The site consisted of what was essentially a village, but one built to take advantage of the abundant wet resources and in an area where open water predominated (*ibid*: 155). It was therefore an entirely anthropogenic island not unlike a *Madan* habitation mound from the marshlands of Iraq as understood and described by Wilfrid Thesinger (1964), made of wattle, brushwood and wood. The Glastonbury houses and hearths were built up over time with successive layers of peat and clay into the mounds by which the site is always identified, pictorially at least. The whole site consisted of over 80 of these mounds, was surrounded by a palisade and had a causeway or raised walkway to take the inhabitants to dry land. Later, during their own work in the Levels, Coles and Coles (*ibid*) paid considerable homage to Bulleid and Gray's work, saying how they both complimented one another in their interests and had the skills required to excavate and interpret the sites on which they worked. Not only that, but they had the ability to record and interrogate the evidence in a way which would not look out of place today, including bringing in external specialists to help with things like animal bone assemblages. As well as publishing this site in full, and Meare Village West, they both continued to excavate sites until they were in their nineties.

In the 19th and early 20th centuries, from Keller to Bulleid and Gray at Glastonbury, it is the significance of notable individuals who have marked out the development of wetland archaeology just as much as the sites and discoveries with which they are associated. This is also true of the related academic fields which make up the inter-disciplinary nature of wetland archaeology. Bulleid and Gray's innovative use of specialists at Glastonbury highlighted for the first time the role that related disciplines could bring to the analysis of an archaeological site, not just in understanding the stratigraphy and the finds but more in depth analysis of the assemblages and the environment.

The role of the specialist in wetland archaeology, and in particular the role of key individuals in developing these niche areas, deserves to be better understood. In the field of environmental archaeology it was Harold Godwin who changed the discipline most in those early years. He pioneered the use of palynology for the reconstruction of past landscape and for archaeological use (e.g. Godwin 1975). Particularly significant were Godwin's studies of pollen in peat in the East Anglian Fens, notably from Wicken Fen where he was able to develop these techniques (e.g. Godwin 1940). This work triggered a quite fundamentally new understanding that it was possible to be able to study and identify past landscapes through scientific analysis of sediments. He went on to collaborate with many archaeologists including with Graham Clark on his excavations in the 1940s at Star Carr (see Clark 1954; 1972), and John Coles in the Somerset Levels from 1960 onwards (e.g. Godwin 1960; 1981). This later work on the Somerset Levels in particular shows what can be achieved with a multi-faceted, inter-disciplinary approach including scientific techniques such as *palynology*.

In terms of individual contributions to the subject, Graham Clark has also had a major impact, in particular for the excavation of Star Carr in the Vale of Pickering. Star Carr if often considered as an exemplar from the early days of wetland archaeology, and perhaps marked a turning point in the study and understanding of wet sites. Star Carr was originally discovered by local amateur archaeologist John Moore in 1947 or 1948 (Moore 1950) and subsequently excavated by Graham Clark over a period of three seasons from 1949 to 1951. It has been suggested by Paul Mellars (1998) that Clark

was on the lookout for a site in the UK which rivalled those found on the continent, such as Mullerup in Denmark so began excavations at Star Carr almost as soon as he could. The site and finds were quickly published by Clark (1954) including environmental reports on the faunal assemblages (Fraser and King 1954) and an environmental reconstruction based on pollen sequences from the lake (Walker and Godwin 1954). Clark believed he had excavated a 'base camp' comprising a wooden platform on the edge of a Late-glacial lake preserved in the accumulated peaty sediments that had developed subsequently. Significant numbers of animal bone, flint tools and microliths, antler and bone tools including 191 barbed points, directed Clark to a conclusion of a working area which was habituated only seasonally. The then newly developed technique of radiocarbon dating allowed him the luxury of a reasonably precise date of around 9500 BP.

Clark's 1954 work was to some extent only the beginning of the story, and since its publication many aspects of the original work have been challenged or reinterpreted (see Lane and Schadla-Hall 2004). Much new information has also been gained through the collection of new data, and because advances in archaeology have added new tools and more highly evolved processing techniques. Mellars and Dark's *Star Carr in Context* (1998) provides a good summary of both the original work and the debates which were active up to that time, summarising as it does the work of Caulfield (1978), Pitts (1979), Jacobi (1978), Legge and Rowley - Conwy (1988) and Clark (1972). The most recent phase of work represents detailed analysis and research into the site and more importantly its wetland context. This has included the discovery and subsequent excavation of a number of inter-related sites located in and around the shore of the former Lake Flixton (e.g. Conneller and Schadla-Hall 2003; Lane and Schadla-Hall *forthcoming)*. This result of over 20 years of subsequent survey and analysis the wider landscape of the Vale of Pickering also continues to be presented (e.g. Powesland *et al* 1986).

The main areas of research and the themes of ongoing debates have been summarised elsewhere (see Lane and Schadla-Hall 2004: 158; Fletcher 2004). They essentially relate to discussions about the size of the population and the longevity of settlement, length of duration of occupation,

and the frequency of settlement episodes. Other subjects include seasonality, and economic function, particularly of the relatively small area of Clark's original excavations. Hierarchy, the importance of activities, and site function in a broader context were also considered, alongside patterns of occupations amongst contemporaneous society.

Perhaps the most significant new findings of research undertaken since Clark's excavations was that the site appeared to be at least 1000 years earlier than Clark had suggested, and that it may have had a longevity of ten times that of the original estimate (Mellars 1999). Trenches were excavated in 1985 and 1989, and the new evidence showed a hitherto unknown complexity in the woodworking around the platform, with split planks shown to form a passable short trackway (see Mellars *et al* 1998; Mellars 1999). Palaeoenvironmental samples showed that the reeds around the site were repeatedly fired or burnt, possibly as some form of growth control mechanism. This was evidenced by charcoal in the sequences revealed by new high-level microscopy that had not been available to Clark.

Detailed survey work has also been carried out on around the fringes of the *palaeo*-lake Flixton which has revealed that many other similar date sites exist around the shore. Excavations at some of these sites showed flints and occupation material but none with the visceral depth and complexity of the finds from the original Star Carr. Star Carr itself is still believed to have been the important focus of activity, evidenced by deposition here of a wider range of classes of artefacts than the other sites. In addition to the 191 unfinished barbed points Clark recovered, the site has also yielded a flint assemblage with a high proportion of burins (considered to have been used for bone and antler working), perforated antler frontlets, shale and amber beads, and perforated red deer teeth. Conneller and Schadla-Hall proposed that this array of unusual material at Star Carr suggests the site to be a locale within the landscape that had been deliberately selected '…for the deposition of specific objects. Particularly objects manufactured from animal remains, [and]… a place where human and animal identities were explored and blurred' (Conneller and Schadla-Hall 2003: 102-103). They rejected explanations for Star Carr as a base camp, a hunting camp, or purely a ritual

site as too narrow and restricted because a wider range of activities took place here (cf. Clark's 1954 Legge and Rowley-Conwy 1988).

Star Carr is internationally recognised, and has become the site which represents the evidence of Mesolithic hunter-gathers in England. Key to its understanding and interpretation would seem to hinge on whether it is 'representative' or should be seen as something more unique (Lane and Schadla-Hall 2004: 146).

Discoveries such as Star Carr were not made in isolation; the site was identified against a background of archaeological development and an overall expansion of the subject, as well as an increasingly professional approach to understanding the past. But they stood out, not just for the quality of the excavator's work and recording, but for the unique preservation of organic material and perhaps more importantly for the stories and pictures of the past that they developed in the imagination of readers. The Mesolithic people, previously only identified from the fragments of their stone tools, were now visible again, seen as more than transitional and peripheral beings but firmly established in the landscape, with a sophisticated belief system and powers to manipulate their environment to their own benefit.

2.2 Research in the last 40 years: The wetland projects

Clark was not alone making unusual finds, and the wetland archaeological record of this period has a number of individuals who are responsible for making unusual discoveries. Noted amateurs are commonly responsible for many finds, for example E.V. (Ted) Wright, who discovered the Ferriby Boats (Wright 1990) in the Humber estuary. But perhaps the name of John Coles is mentioned more than anybody else in the field, and has become synonymous with wetland archaeology mainly through his work on the Somerset Levels.

John Coles was one of Clark's pre-eminent pupils and it was Clark who introduced Coles to the Somerset Levels (Van de Noort and O' Sullivan 2006: 23). Both approached wetland archaeology from a similar, functionalist, perspective (*ibid*). This approach has to some extent established and then dominated the last 40 years of wetland archaeological research; firstly through Coles' own work in creating the Somerset Levels Project; followed by

a development and a transposition of the methodology to the East Anglian Fens which led to the development of the Fenlands Project. In turn, this led to the survey of mires of the North West Midlands, Cheshire, Merseyside and the North West known collectively as the North West Wetlands Survey (NWWS), and finally the Humber and the Humber Wetlands Project (HWP). English Heritage (or its predecessor at the Department of Environment) supported each of the projects through continual acknowledgement of the role of this survey and assessment approach, and crucially with funding throughout. The first grant for the Somerset Levels was made in 1973 (Coles 2001: 25) with funding continuing until 1989. The Fenlands Survey was initiated in 1976, the NWWS in 1989 and the HWP in 1992, with English Heritage funding totalling close to £6 million (*ibid*) by the time of the close of the last project in 2000. Although the HWP was wound up in 2000, English Heritage has continued to support archaeological initiatives with a wetland theme. This includes surveys of upland peat (e.g. Quatermain *et al* 2007), coastal survey (e.g. Fulford *et al* 1997), and projects with a more strategic look at wetlands such as the summary and assessment of the state of wetland archaeology known as Monuments at Risk in England's Wetlands (Van de Noort *et al* 2002).

Somerset Levels Project

This project ran from 1963 onwards, and set out systematically to survey the wetlands known as the Somerset Levels; in particular, the areas of lowland raised mire under threat from peat extraction. The rescue agenda was implicit from the beginning, but without an understanding of the wetland processes, the threat of loss through resource extraction could not be properly understood. An exacting methodology for excavation and recording of sites was also crucial to the project's success, as was the development of specialist input, such as that provided by Godwin (see above), whose research was fully integrated into the methodology for the first time. Publication and dissemination of results became a further important component (e.g. Coles and Coles 1980, and Coles and Coles 1986).

In Somerset, as elsewhere in the country, many antiquarian discoveries were known, but the value of the wetlands for the preservation of

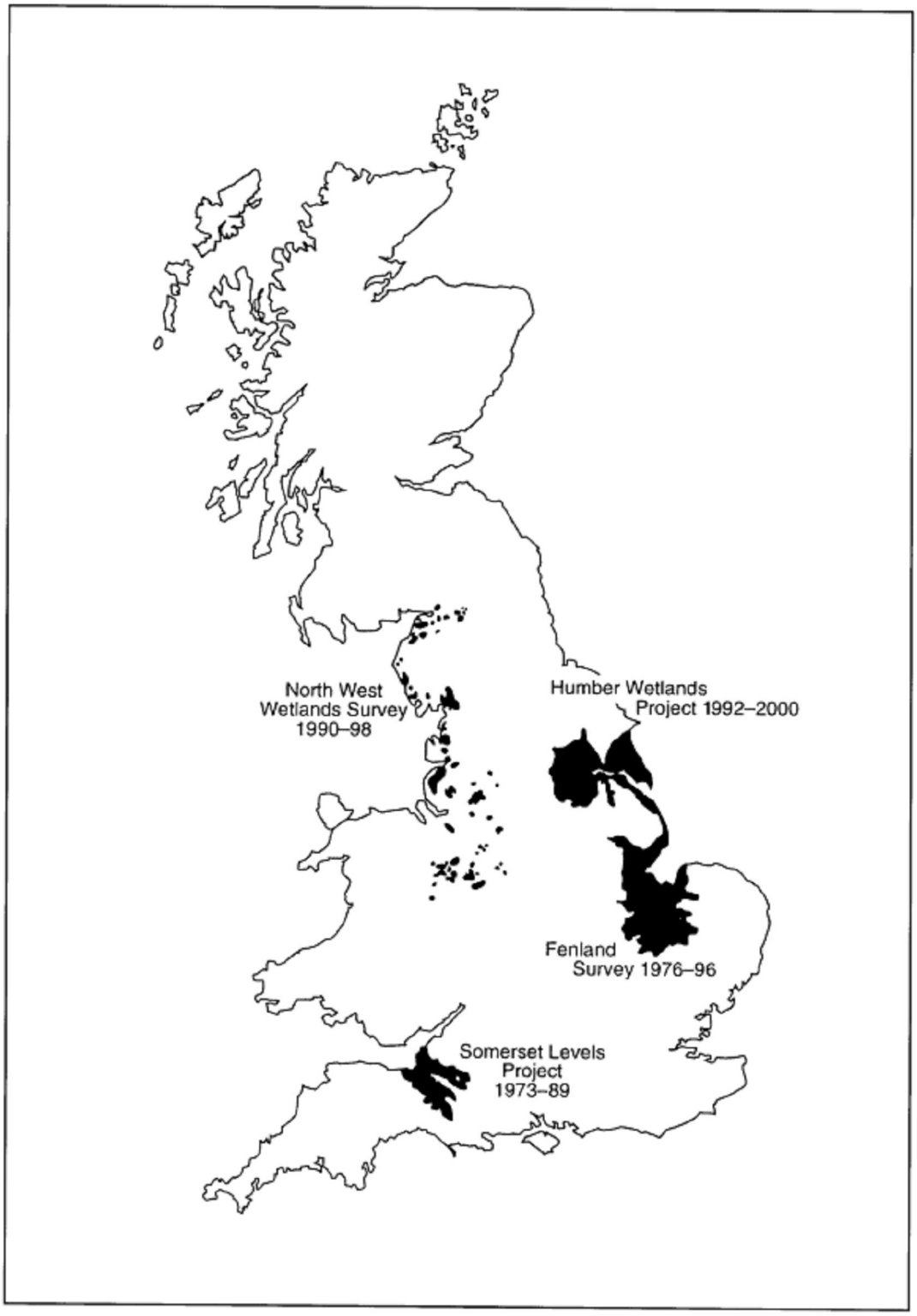

Figure 2.1 English Heritage funded Wetland Projects (After Van de Noort 2002: 88)

archaeology had already been firmly established by Bulleid and Gray through the work at Glastonbury Lake Village and then Meare Village East. One of the starting points for the Levels project was the analysis of antiquarian evidence including that excavated by Bulleid and Grey.

What these sites in particular had also shown was not only the quality of the archaeology, but also the value of persevering with the excavations of sites in this landscape. One of the public successes of the project was to re-publish and re-interpret much antiquarian material, including the Glastonbury Lake Village and Meare Village East (e.g. Coles and Coles 1986; Coles and Minnit 1995). This did much to introduce these sites and discoveries to a new audience and a new generation of academics. It also did much to raise the profile of wetlands for their preservation potential and the profile of the Somerset Levels archaeology. In academic terms, however, the success was arguably through the continual pioneering of new environmental archaeological techniques and in particular the integration of a multi-disciplinary approach into the project. At Glastonbury Lake Village, for example, the associated work to establish the environmental context added a new dimension to the site (Coles and Coles 1986: 153). It showed that within a 10 km radius there was a considerable variety of habitats and a range of bio-diversity available to the occupants. Not only would this society have had an abundant supply of natural resources, but by siting the village on the edge of the wetland they were ideally located in a strong position to benefit from them.

Although the project looked at many aspects of the history of the Somerset moors and Levels, it will always be associated with the discovery and subsequent excavation of the Sweet Track (Coles and Coles 1986: 41). Excavated from 1970 onwards, this is the most famous of the Somerset trackways, and also one of the oldest (*ibid*: 19). It is however just one of about twenty other tracks and bog roads of different periods which had criss-crossed the Levels in prehistory, excavated and recorded during the life of the project. These range in date from the Neolithic to the Iron Age. Also recorded were a range of construction techniques found amongst the trackways. These varied from the single planks of the Sweet Track, to corduroy type tracks such as the Abbot's Way, made of roundwood or split

timbers laid side-by-side across the route. Similarly hurdle type tracks, such as those at the Honeygore complex, were recorded. The hurdles were woven out of small round wood sections of willow and hazel not unlike a fence panel, laid end-to-end across the wet ground, and have since been recorded regularly in other wetlands (e.g. Fletcher 1999). Recognition of the complexity of these structures was also important to the project, and the finds represented direct evidence of the technological skills of the prehistoric communities that built them, even though 2000 years separate the difference ages represented. The Meare Heath and Sweet Tracks for example are complex structures which differ considerably in form and appearance. The Sweet Track is made of planks laid end-to-end, which, in order to carry the weight across the wet ground, were placed on a structure made from crossed stakes inserted into the marsh. In contrast, the Meare Heath track is a wider and more substantial construction, formed of split planks laid side-by-side over a sub-frame of posts and structural timbers.

Much of the success of the Levels project was achieved through close co-operation with drainage engineers, land owners and peat cutters, as well as though dialogue with local people who had lived and worked in the Levels all their lives. In addition, the development of a rigorous analytical methodology was a significant outcome of the work, particularly to overcome the difficulties faced by working in such a challenging environment. Furthermore, the destructive processes active in the Levels created the need for a highly integrated academic approach to both recording and publication, to ensure that an archive would exist even after the sites, particularly those in the peat fields, had been destroyed. The preservation conditions also provided a chance to use newly found abilities in the analysis of these sites. Integrating environmental archaeology into the reports enhanced the descriptive dialogue and provided the contemporary environmental context. Although this was not unlike Clark's earlier work at Star Carr, this integrative methodological approach, followed through the analysis, description and publication, was seen as one of the main methodological breakthroughs of wetland archaeology. This has been an undoubted success, and has been something tangible exported to other branches of archaeology, although it is recognised today as having been perhaps too environmentally deterministic

and functionalist in its approach (Van de Noort and O' Sullivan 2006: 24). Recording the unique structures and understanding the contemporary environment was a significant development in archaeological practice, however the wider landscape in which the sites had existed had not been as closely studied. A holistic view of the prehistoric peatlands in Somerset continues to be an area for academic study. The type of survey and assessment work pioneered by the Levels project however, continued to dominate the agenda in wetland studies over the next 30 years. It influenced methodology, research and the distribution of funding, but remained largely unchallenged as an approach until 2000 (see Van de Noort *et al* 2002).

Fenlands Research Project

The Fenlands Research Project with John Coles as director and Chairman used the same ethos of survey and integrated environmental and archaeological techniques as the Somerset Levels Project and applied them to the vast areas of black soils and peat fields that made up the eastern Fens in Cambridgeshire, Norfolk, Lincolnshire, Peterborough and Suffolk. Rather different from the Somerset Levels, the main threat within the peat and to the peatland archaeology of the Fens was not extraction but peat shrinkage and wastage. Since early medieval times reclamation for agriculture involving drainage channels and water displacement through pumping had radically lowered the water tables and altered the landscape. The process has been accelerating since the 16th century, and more ambitious projects have developed as technologies and knowledge in drainage methods advanced. The final and most lasting change, however, was the widespread conversion of these areas to arable production in the post-Second World War era, which further compounded the problem of wasting and shrinkage. As the peats dried, the newly ploughed soils often turned to dust and then blew away.

The methodology from the Somerset Levels had to be adapted to accommodate the size and scale of the Fenlands landscape, and the different local geography and conditions. The wetland environment of the Fens is not universally similar across the whole area, and small regional variations exist in topography, environmental conditions and local character. Moreover they exist in a landscape context that varies considerably from the

Levels and Moors of Somerset. The cut-over bog and raised mires of the Levels were replaced by the large expanse of the drained and farming landscape of the former fen. Methodology, then, had to evolve and be adapted from that used in the Levels. Repeated visits to survey the cut sections of the bogs were replaced more by way of large area landscape assessment through field walking (Van de Noort 2002: 90). Co-operation was sought from farmers instead of the peat industry, with field, aerial, and dyke survey becoming the most successful techniques for identifying former land surfaces emerging from the wasting peat. The work was undertaken on a county by county basis, parish by parish, farm by farm, and field by field. It included work undertaken in the Cambridgeshire, Lincolnshire, Norfolk and the western edge of Suffolk, with the addition of the areas east of Peterborough. Each competed survey area was published as a monograph, with the first to be completed being the survey of the Lower Welland Valley in Lincolnshire (Pryor and French 1985). This was followed by the survey volume for the fen areas in north west Cambridgeshire (Hall 1987) and two volumes of survey in Norfolk (Silvester 1988 and 1991). There were two further Lincolnshire parish surveys (Hayes and Lane 1992, and Lane 1993), and two in Cambridgeshire (Hall 1992 and 1996). In addition specific aspects of the project were published in associated volumes. This included a programme of dyke survey, which highlighted results of the field walking of the newly cut drainage ditches to the east of Peterborough (French and Pryor 1993). This identified for the first time the buried landscapes of this area, and includes assessment of sites such as Flag Fen and the ringwork at Borough Fen. Continuing the theme of integrated archaeological and palaeoenvironmental assessment begun in the Somerset Levels project, the publications included a remarkable environmental volume (Waller 1994). This outlined the environmental context for the survey work and in particular it focused on both the stratigraphic detail, and also the changes to the landscape over time. Perhaps unlike some of the Somerset Levels projects this holistic landscape approach allowed a broader understanding of the chronology of change to be more widely understood. Other synthetic volumes of research were also produced as part of the project, for example focusing on a particular area such as the Wissey embayment (Healey 1996), or

contemporary excavation projects (e.g. Simpson *et al* 1993). The Fenland project as a whole was summarised in an English Heritage publication in 1994 (Hall and Coles 1994). Only the survey of the two Suffolk fen edge parishes of Mildenhall and Lakenheath remain unpublished (Martin *pers. comm*.)

The fieldwalking and survey work was followed between 1991 and 1995 by the Fenland Management Project (Crowson *et al* 2000). This was a targeted programme of excavations designed to investigate a selection of sites based on the results of the earlier Fenland Survey. Unlike the Somerset Levels project this was a pre-determined and designed survey, supported financially by the newly formed English Heritage. This allowed a very professional and hitherto unheard-of level of formalisation. In the publications, for example, counties and parishes could be compared like with like, and period by period. The results were a testament to the methodology; of an estimated 400,000 hectares of fen or former fen, 240,000 hectares of land were surveyed by fieldwalking with an estimated 2000 to 2500 new archaeological sites being added to the regional databases (Coles 2001: 25; Van de Noort 2002: 90).The information provided by the project is such an accurate and reliable picture of fenland finds that it continues to be interrogated as a resource (e.g. Yates and Bradley 2010).

North West Wetlands Survey

The North West Wetlands are not such a clearly defined geographic unit as the Somerset Levels or the Fenlands. This does not diminish the preservation potential, nor the cultural value of these wetland systems, but it did mean that the North West Wetlands Survey (NWWS) commissioned by English Heritage in 1989, was perhaps the most varied of the English Heritage sponsored wetland projects in both geography and the types of wetlands surveyed (Coles 2001: 25). The survey ranged from Whixall Moss in Shropshire through the counties of Cheshire and Lancashire to the coastal raised mires of the Solway Firth in the north of Cumbria, taking in the mosses and meres of Staffordshire, Greater Manchester and Merseyside on the way. Although seen as disparate and often small, these wetland bodies belie the

fact that they include some 37,000 ha of peatlands, a total thought to be greater that that of eastern England (Middleton and Wells 1990: 2).

Field work was undertaken over nine years in consecutive seasons and the work published in an annual summary (e.g. Middleton 1990) and subsequently as a series of full monographs. The survey of the wetlands of Merseyside was the first to be published (Cowell and Innes 1994). It was followed by the surveys of the wetlands of Greater Manchester and North Lancashire (Hall *et al* 1995; Middleton *et al* 1995). In addition there were surveys undertaken in Cheshire, Shropshire and Staffordshire which were published in consecutive years (Leah *et al* 1997; Leah *et al* 1998). A number of volumes were published after the survey had finished, in particular the survey of the lowland wetlands of Cumbria (Hodgkinson *et al* 2000), although the long awaited survey volume of the wetlands of South-West Lancashire is still outstanding (Middleton *et al forthcoming*). The timing and disjointed geographical spread of the publications reflects a number of factors in the survey; primarily, the large area covered and involved in the survey (from Shropshire to the Solway Firth), as well as the number of organisations and individuals involved in the survey, research and publications, not to mention the many counties involved each with a different local governance, separate archaeological managers and agendas. The geographical differences were also reflected in the type of wetlands encountered. In the far north along the Solway Firth are some of the larger lowland raised mires in England, such as Wedholme Flow. There are also raised mires in Shropshire as well as large coastal wetlands around Merseyside and the Lancashire coast, which resemble the Fens of Cambridgeshire and Lincolnshire. In addition to these larger landforms there are many distinct small and medium sized mires and bogs, which vary considerably from small in-filled glacial hollows and basin mires to estuarine and floodplain peats. The size of the wetlands also varies from large raised mires many miles across to those situated in a single field.

The palaeoecological value and the preservation potential of the wetland bodies that made up the NWWS had in many cases already been established, with a number of the larger bogs and mosses having been researched and included in synthetic studies (e.g. Godwin 1975). The Fenns and Whixhall Mosses on the Welsh border had for example been examined

before the Second World War (Hardy 1939) and again in the post-Second World War period (e.g. Turner 1964). The site had been recognised for the remains of extinct species (e.g. Tallis and Birks 1965), and by climate scientists for its detailed and well preserved sequence (Chambers *et al* 1996: 30). The discovery of Lindow Man in 1984 (Turner 1999: 227), however, created an awareness of the potential for archaeological preservation as well as the palaeoenvironmental history. The potential losses occurring from the peat cutting and degradation of the resource presented a pressing case for consistent survey in the fenlands mould (Leah *et al* 1997:1).

Providing an overview and synthesis of previous research became an important starting point for the NWWS, and it was initiated by the undertaking of a feasibility study (Howard-Davis *et al* 1988). Following on from the Fenland work the basic methodology and concept was also imported, with the brief to undertake a full archaeological survey of the wetlands. This encompassed a multi-disciplinary approach using archaeological survey techniques such as fieldwalking, closely tied in with palaeoecological survey and assessment. Dyke survey, which had proved so productive in the Fens, was not appropriate, however an early Geographical Information System (GIS), a relatively new innovation at the time, was used for the first time in a major archaeological project (Van de Noort 2002: 91).

Whereas the successes of the Fenlands survey often came through fieldwalking, with ideal field survey conditions in the Fens created by fine peaty soils, soft and sandy substrates and a level, open plough dominated landscape, it was not so easy in the North West. Although the methodology was imported the conditions were not similar. What Leah *et al* (1998: 119) called 'the practical constraints' meant that at the time of survey much of the landscape of places like Staffordshire and Shropshire was under pasture. The methods and conditions for drainage also differed and few exposed drain sections were encountered: therefore dyke survey, seen as such a success in the Fens for finding deeply buried sites, could not be used. Methodologies had to be flexible and adaptable to fit the conditions encountered in the various regions. For example, the peat cutting that was continuing in the coastal raised mires along the Solway Firth such as Wedholme Flow required survey techniques not unlike those employed in the Somerset Levels.

Whereas in the large lowland mosses in South West Lancashire and Merseyside which had largely been drained and converted to arable agriculture, the Fenland methodologies such as fieldwalking were more appropriate. In other areas however the survey was dominated by the palaeoenvironmental assessment, in particular in Staffordshire and parts of Shropshire where pasture was more common in the wetland areas. Overall, across the projects, discoveries of new sites were not as prevalent as in the fenlands survey (Coles 2001: 25). The archaeological work was often reduced to research summaries of known sites; however the palaeoecology survey produced an extensive gazetteer of meres and mosses, alongside an important assessment of their stratigraphy, date and potential. In this project, perhaps more so than the Fenlands work or the Somerset Levels project, palaeoenvironmental work was truly accepted and integrated as a survey technique (Van de Noort 2002: 91).

Perhaps because the fieldwalking finds, and new sites added to the record being relatively few, or because of the strong legacy of knowledge from earlier studies, the palaeoenvironmental analysis has been seen as one of the major success of this project (Coles 2001: 25). At the time, the successes of the regional summaries and publications were also seen as providing an important synthesis of knowledge and an overview the known resource (e.g. Watson 1998: *ix*). In terms of potential shortcomings, the range of wetland types and the variety of locations meant that co-ordinating research and developing coherent themes from the project was perhaps more difficult than for other surveys. Unlike during the Fenlands work excavations were not routinely undertaken. Overall, however, it was the absence of analysis relating to the management of these sites, or about issues affecting their survival and preservation that meant the volumes produced are reduced to the level of gazetteer. As a theme, predictive analysis on site location and recommendations for the future management of the resource was only re-visited outside of the main project publications (e.g. Middleton 1999: 157).

The Humber Wetlands Project

There is a degree of personal experience in the Humber Wetlands Project (HWP), as the author was a Field Officer with the project between 1997- 2000. In common with the North West Wetlands, the Humber Wetlands are not a cohesive wetland unit, and nominally or in perception did not exist in the same way as the Fens. The name was only coined in 1988 as an academic term to describe the low-lying lands which form part of the catchment for the Humber estuary (Van de Noort 2004:1). In a wetland area such as the Fens there is a cultural unity and identity embodied in the name, but there was no such commonality in the wetlands of the Humber. Instead the area is predominantly a collection of different wetland types having formed under and due to different contexts and geographic environments. These range in form from a landscape of small meres in Holderness, to the extensive raised mires systems of Thorne and Hatfield Moors. The area also includes the Humber estuary fed by large tidal rivers and with expansive areas of estuarine salt marsh. Within a regional survey such as this it was necessary to recognise the distinct nature of each wetland type and to work towards a better understanding of the processes operating on and within that landform (*ibid*).

As varied as these wetland areas are, the work to survey them was an equally complex operation and mirrored the North West survey in its difficulty. In terms of logistics, the survey covered both the north and south sides of the Humber, including the Holderness and East Lindsey coasts, and the areas of East, North and South Yorkshire, North Lincolnshire, Nottinghamshire and North East Lincolnshire. This area is covered by a number of main rivers including the lower Trent, Aire, Wharfe, Ouse, Derwent, Ancholme, Hull and their tributaries, which drain a landmass that equates to approximately 1/5 of England through the Humber estuary (Pethick 1990: 54). The Humber Wetlands, defined by the parameters of the project as the area below the 10 m Above Ordnance Datum (AOD) contour, make up an area close to 330,000 ha, with approximately 200,000 ha considered to have wet potential (Van de Noort 2004: 3). For practical reasons the survey area was restricted, with cut off points along the major rivers. The Trent survey for example was restricted to the lower area of the river valley and the survey of the Ouse valley did not

go as far as York, in spite of the city being known for its well preserved organic finds (e.g. Morris 2000).

The HWP, similar to the NWWS, was preceded by a desk based assessment which gave an indication of the quality of the known resource (Van de Noort and Davies 1993). The region was then sub-divided in to six areas, with each area becoming the focus of a single season's survey, published the following year as a monograph, with an annual report. The area of Holderness on the coast was the first volume to be published in 1995, which was followed by the survey volume for the Humberhead Levels, Lower Trent and Ancholme Valleys, the Vale of York, and the Hull valley (Van de Noort and Ellis 1995 to 2000). The Lincolnshire Marsh was the final area to be surveyed and published (see Fenwick *et al* 2001)

The six survey catchments were still relatively large, with the Lincolnshire Marsh at 55,000 ha being a good example (Van de Noort and Etté 2001:1). To improve the success of the survey, a methodology was developed to help direct the work down into smaller catchment areas. The preferred method was to focus on a series of 5 x 4 km areas, known as 'map views', which were scattered across the survey area to ensure a full coverage. Using the Lincolnshire Marsh as an example, 12 map views were used in all, distributed evenly from north to south (Fenwick *et al* 2001: 98). This project methodology was, like the NWWS, developed on a theme that followed its antecedents in form and style, taking the experiences of each of the previous projects and building on them. Methodological techniques, where applicable, were again transposed to suit the regional conditions. This was certainly true in terms of field survey techniques, and fieldwalking and sediment coring were widely used throughout the project from its inception in 1992 through to 2000. In other ways the HWP differed, in particular where new recording methodologies were available, they were used to great effect, alongside standard fieldwork techniques. A digital map based GIS was used from the outset, and was teamed with hand-held palm top computers through which all new sites and finds were entered into the database in the field. This was particularly useful for fieldwalking, where finds could be rapidly plotted at the end of every day in the field, and transposed into map based evidence almost immediately. The project also purchased its own digital Global

Positioning Survey (*dGPS*) system for survey work, which increased the speed and efficacy of fieldwork, survey and excavation (Van de Noort 2002: 92-3). The significant value however was found to be the way in which digital terrain models could be created for a range of archaeological sites. This was particularly effective on small wetland sites, river channels and earthworks such as moated sites (e.g. Chapman *et al* 2000: 112; Fenwick 1999: 264). In the Lincolnshire Marsh small discrete sites such as saltern mounds and the barrow cemetery at Butterbump were rapidly surveyed and analysed (Fenwick *et al* 2001: 122 and 185). Probably the best known example of the work from this time is at Sutton Common where the whole site complex including archaeological features, small sand islands and the wetlands can be seen depicted on the models (Chapman 2007: 8). The model was a useful tool to enable the localised landscape to be identified and used to provide the basis for building an understanding of the site, its geographical context and the active wetland processes.

The six publications were rapidly conceived and executed within the timeframe of the survey, with the final Lincolnshire Marsh volume published the year after completion in 2001. In addition the work was reported in an annual report series and at an annual conference, hosted in the region that had been surveyed. In a similar way to the 1994 work by Hall and Coles which concluded and summarised the fenlands work, a synthesis publication on the Humber Wetlands was also produced (Van de Noort 2004). A considerable amount of additional research and publication has also been generated as a result of the survey and excavation work undertaken through the project (e.g. Gearey and Fletcher 2004).

As this project was brought to an end, it was clear that this was to be the last in the large regional wetland surveys. Although other wetland projects followed, the impetus for this kind of survey work had begun to fall away. What followed was a series of smaller projects that sought to evaluate the results and establish the value of the data provided by the big survey (e.g. Coles 2001; Van de Noort 2002; Van de Noort et al 2002).

Other wetland survey, excavation and analysis over the last 30 years

The work in the Somerset Levels, the Fens, North West Wetlands and Humber Wetlands, undertaken between 1973 and 2000, provides a body of work on an unprecedented scale, with few parallels in Europe (Van de Noort 2002: 94). English Heritage's estimated £6 million worth of funding towards the cost of the projects has not been replicated on an equivalent scale outside England (Coles 2001: 25-26). These four areas, although representing large bodies or geographic units of wet areas, do not however represent all the wetland resource present and a variety of other equally important deposits exist throughout the country. This includes vast areas of upland blanket bogs in the south west and the Pennines as well as expansive areas of estuarine, coastal and riparian wetlands. There have been a number of other smaller research and survey projects undertaken in these areas, either paid for by grants or as University-based research projects. The role of development funded analysis and research in wetlands has also provided a smaller but equally valuable body of work. The value of this range of smaller projects is significant particularly in developing a picture of regional wetlands; in recovering information from often challenging environments and in the delivery of synthetic analysis. The contribution continues to develop our understanding of wetlands, and adds to the wider archaeological debate.

The Severn Estuary is perhaps the best example of an area where this multi-faceted approach has provided important archaeology, and where consistently high quality research has been undertaken and published. The discoveries in the Somerset peatfields through the 1970s and 80s tended to dominate the archaeological agenda in the region (see Somerset Levels Project above). By the late 1980s however, the focus had moved away from the inland peat to include the North Somerset Levels, the Gwent Levels and the large areas of wetlands which fringe the Severn Estuary, on both the English and Welsh side of the river (Turner *et al* 2000: 1). This is an area which makes up an estimated 840 km^2 of wetlands or former wetlands (Rippon 2001a: vii), and includes well preserved evidence from the Mesolithic (e.g. Bell 2007) through to relict and drained landscapes of the Roman and Medieval periods (e.g. Rippon 1996). The variety and range of sites which have been identified during this period have been well illustrated through publication, which includes synthesis papers (e.g. Bell and Neumann 1997),

synthetic conference volumes (e.g. Rippon 2001b) and monographs (e.g. Bell *et al* 2000). Palaeoenvironmental work has been well integrated as a technique in both survey and development control work, and has likewise been well published (e.g. Bell 2001). The foundation of the Severn Estuary Levels Research Committee (SELRC) in 1990 provided a new element to the research. SELRC has both helped in the co-ordination of research on both sides of the river, and has enabled the co-ordinated publication of the multi-faceted projects. Although specific aspects of the work have been funded by organisations such as CADW and English Heritage, an important contribution to the debate and to the SELRC journal series has been added from the development sector (Allen 2010: 4). The annual journal published by SELRC has proved invaluable in the dissemination of these projects and has been published every year since it inception in 1990 (see Allen and Brown 2010).

In a similar vein to the work in the Severn Estuary, notable surveys have also been undertaken of the intertidal resources of the Solway Firth, along the north Cumbrian and Dumfriesshire coasts (e.g. Cressey *et al* 2001); of the extensive coastal marshes such as the Blackwater Estuary in Essex (Wilkinson and Murphy 1995; Wallis and Waughman 1998); and of smaller coastal wetlands such as Langstone Harbour near Portsmouth (Allen and Gardiner 2000) and the Solent and Isle of Wight (Loader *et al* 1997). A large survey project has also been undertaken which set out to establish the potential of upland peatlands for the preservation and survival of cultural indicators and archaeological sites (Quartermaine *et al* 2007). Developer led archaeology has likewise led to some notable research being undertaken, in particular extensions to the underground rail network allowed an unprecedented access to the palaeoenvironmental resources of the Thames in London (Sidell *et al* 2000).

Although this is an illustrative sample and does not represent every case of regional wetland survey, it does present a picture of how important these recording methodologies have been to our understanding of wetlands, particularly the extent to which these surveys have contributed to our knowledge of how wetlands were exploited in the past and our understanding of the dynamics of human and environmental interactions. Much of this

survey approach owes it origins to the pioneering work in the Somerset Levels Project.

Individual or unique sites, such as Flag Fen, Shinewater, and Harter's Hill

In addition to the important individual or small finds known from wetlands, there are a similarly important group of wet preserved archaeological sites which stand out as major archaeological discoveries. Although these examples discussed below are not exhaustive, they serve to illustrate the complexity of these environments and the additional archaeological components the wet preservation conditions bring.

Flag Fen, for example, is one of the most important archaeological sites in England and one of the key wet preserved sites. The site was initially discovered during the Fenlands Survey, with waterlogged wooden planks and finds located in the edge of a ditch during the Dyke Survey exercise (see French and Pryor 1993; Hall and Coles 1994: 75-78). Subsequent excavations over a period of 10 years or so were funded by English Heritage which led to further discovery and categorisation of the site and the archaeological finds. The most complete volumes have only been recently published and include specialist reports and associated site information (cf. Pryor 2001; Pryor and Bamforth 2011). Thorough academic summaries were also published by Pryor in 1991 and 1992, alongside a more popular summary (e.g. Pryor 2002a). Individual excavations relevant to the Flag Fen story have also been published; in particular the work at Fengate has helped to put the wetlands site in its contemporary landscape (Pryor 1974). Of particular note is the specialist work, such as the palaeoenvironmental analysis and the wood and metal assemblages which have been individually published (e.g. Scaife 1992; Taylor 1992; Coombs 1992; Taylor 2001). The site has also generated significant research which has been discussed elsewhere in the academic sphere (e.g. Taylor and Pryor 1990). A summary of the site, the issues and the archaeology was also published as part of the English Heritage's funded Heritage Management of England's Wetlands (HMEW) project (Fletcher 2004).

The Flag Fen site is Bronze Age in date, but continued in use for up to 400 years (approximately 1300 – 900 BC). It consists of a preserved wooden platform, and an alignment of multiple posts, which stretched across a low-lying area of land between Fengate and Northey, east of Peterbrorough. Large-scale excavations at Fengate in particular have shown that these dryland areas which surrounded the wet areas were home to an extensive farming community, and the evidence of the fields, boundaries, tracks and drove roads was recognised and excavated. At Fengate, the post rows begin where the drove roads end, marking the wetland edge and the change of environment. Close to the eastern shore a layered wooden platform was built, both physically and functionally linked to the causeway. Many of the material finds such as the bronze objects, tools and weapons have been found deposited amongst and around the posts.

The preservation is remarkable: the site was built at a time of rising water tables, and the wooden platform became submerged beneath encroaching peat which developed across the Fens, caused by rising water tables and sea level change in later prehistory. The palaeoenvironmental value of Flag Fen includes the large structural timbers posts; transverse wattling and wood chips; the palaeoenvironmental matrix of peats and the wider landscape perspective provided by the peat fields of the Fens.

The modern landscape offers a sharp contrast: drainage, reclamation and development have reclaimed this area for farmland. It was the designation of Peterborough as a New Town in 1968 that led to an expansion in development which has spread out of the medieval town and out into the Fens. This expansion provided the impetus for excavations sites such as those of Fengate, (1971 – 1878) and the power station site (1989). After the main phase of excavation, the site was taken over by the Flag Fen Trust who continued to excavate smaller areas of the site, but also placed elements of the causeway on permanent display at the Flag Fen Visitors Centre. Public display further enhances the value of the site, which gives public accessibility to the finds and provides context at the Centre. This is one of the few sites in England which is dedicated to the interpretation of wetland archaeology, and Flag Fen is also one of the few sites to tackle the display of wet sites and how to present these to the public. However, it is the form, function and the

abundance of the deposited material evidence that sets this site apart from others in archaeology. Wet-preserved organic material is rare but this site also has other aspects which make it unusual, in particular objects such as metal tools, weapons, the woodwork, re-used building timbers, and rare objects such as a wheel.

There are however similar, but perhaps less famous, waterlogged sites that are equally unusual. The archaeology found at Shinewater Park near Eastbourne in East Sussex is another good example of a well preserved Bronze Age wetland site. It is also one of the few examples of wet preserved archaeology along the south east coast of England, and because of its Bronze Age date, it also has clear parallels with Flag Fen. The site was only discovered in 1995 during a flood alleviation scheme on the Willingdon Levels near Eastbourne, East Sussex (Woodcock 1998: 11). The site was discovered during the excavation on the edge of a peaty former wetland, which formed part of a series of low lying meadows, linked with the south coast (*ibid*). The site consists of a well preserved wooden platform, a trackway and stake alignments, associated with a large assemblage of cultural artefacts. The platform is estimated to cover an approximate area of 2000 m^2 (Greatorex 2003: 89). A fifty metre section was excavated, which showed that it was constructed of large oak posts up to 2.6 m in length associated with a horizontally layered platform of oak and an upper layer of hazel rods laid at right angles (*ibid*). *In-situ* hearths were also recorded, set on clay and raised above the wooden platform. The site was associated with occupation debris and an extensive array of cultural material including worked stone, bone, amber beads, bracelets, human remains and pottery dated the site to the Later Bronze Age (LBA) between c. 900 – 800 BC (Woodcock 1998: 12). Of the metal finds, one in particular stood out, which was a bronze sickle with an intact handle (*ibid*: 15). The platform is associated with a section of a trackway also excavated in 1998, which appears to connect the platform with the dry land to the north and a number of wooden post rows known as the Ditton Alignments (Greatorex 2003: 95). It is the deposition of tools and objects, platform, post alignments, date, form location and longevity which drives the parallels with Flag Fen.

Initially discovered in 1996 by a local farmer, the site at Harter's Hill in Somerset is another post alignment which dates to the Bronze Age, this time located in the deep peats of Queen's Sedge Moor in the Somerset Levels, north-east of Glastonbury (Brunning 1998: 5). Partially excavated in 2003, the site was found to consist of a triple alignment of oak piles and horizontal timbers that projects over 100 metres. Due to the well preserved timbers, dendrochronology was able to date the structure to 1076 BC, although it was clear that it continued to be added to or repaired until 1064 BC (Brunning 2001). It is also associated with an assemblage of worked archaeological wood, although none of the metal work finds which are so prominently associated with Flag Fen or the Shinewater site have been recovered here. The form and location does suggest some similarities with Shinewater, and to some extent Flag Fen, although the site remains difficult to interpret. Whilst it may have maintained some symbolic function, the purpose of the alignment is not yet known,

Although this section on sites has focussed on those from the Bronze Age, it would have been equally possible to use other prehistoric wet examples such as the Iron Age causeways and in the Witham Valley in Lincolnshire to illustrate the wealth of area sites located in England's wetland areas (e.g. Catney and Start 2003).

Individual finds, such as boats and other object

As discussed above, the archaeological record is full of unusual finds and rare discoveries that have been made in wetland environments. These have in the past often been treated as curios and unexplained phenomenon of our ancestors. Bog bodies in particular were presented like this, as those from antiquarian records and newspaper clippings from Whixhall Moss have shown. The same preservation conditions that led to such finds being recovered have however also allowed a particularly rare and unusually detailed insight into our past. The site of Star Carr is a prime example, where the finds and particularly the story told, have engaged students and the public alike. There are many scatters of Mesolithic material known from the archaeological record, some have also been excavated, even one or two in a wetland environment. None however can match Star Carr for the width and

breadth of information gained because of the preservation conditions. Even if Star Carr was atypical of the sites of that period to the occupants, for archaeologists no other site has provided such a level of detail.

There have been many other exciting finds and sites of all periods from wetlands which are of international significance and have advanced our knowledge of the past because of what has been preserved in the wet anoxic conditions. One example would be that of wooden boats.

Wherever there are waterways boats have been used and wherever there are wetlands it seems that boat remains have always been found in them (e.g. McGrail 2001). Perhaps the oldest evidence for the use of boats in England is a paddle from Star Carr (Clark 1954: 178). Although, unlike finds from a European context, there are no logboats known in the record before the Neolithic (e.g. Burov 1996; Niblett 2001; Clark 1940: 76). The Neolithic date for the Hertfordshire logboat is also debated, and it has been suggested there may have been a preference for hide built coracle type boats in early periods, and their ephemeral and fragile nature may have left little trace (e.g. McGrail 2001 and Van de Noort 2004: 79).

Equally the considerable depth at which water-logged Mesolithic deposits survive below current sea levels is greater than a level at which widespread systematic exploration is possible (see Sidell *et al* 2000: 120; Van de Noort 2004: 79). Individual finds of logboats and craft can tell us a great deal about technology, construction and process, and study on the corpus of boat material can likewise expand this area of study to include an understanding of the seafaring capabilities and handling of these craft (McGrail 2001). Boat finds have also been a way of providing evidence for the interpretation of social networks for those communities living by water (Van de Noort 2003).

In particular, it was the finding of Bronze Age sewn-plank boats from Humber foreshore at North Ferriby that radically changed the agenda on waterborne transport in prehistory (Wright and Wright 1939, Wright and Churchill 1965; Wright 1990; Wright *et al* 2001). The considerable technological achievement shown by the development of such vessels has led to a major re-assessment of the level of craft, construction and engineering skills that existed amongst the population. The levels of

technology, the relationship of people and their environment and international trade and exchange in the Bronze Age, have all been re-examined as a consequence (e.g. Van de Noort 2003, Chapman and Gearey 2004)

As well as those from North Ferriby, remains of Bronze Age sewn plank boats are also known from Kilnsea (Van de Noort *et al* 1999) in the outer Humber estuary, and Brigg on the river Ancholme (McGrail 1975, McGrail 1981). There is evidence for three craft from the Severn Estuary, one at Goldcliff, and two at Caldicot (McGrail 2001) and also one from Dover (Clarke 2004). The three oldest vessels represented by the finds from North Ferriby (for summary see Fletcher *et al* 1999: 213-216), Kilnsea and the earlier of the two finds from Caldicot form the oldest known group of boats of their kind. Much work has been done to confirm the dates of these vessels (e.g. Van de Noort *et al* 1999; Wright *et al* 2001). Since the initial discovery of Ferriby 1 in 1937 the nearness of the Ferriby finds to each other, along with the recent discovery of a paddle in the same location (Fenwick 1995), has led to suggestions that this area was a prehistoric boat yard (Van de Noort 2003: 409). Of all the sewn plank boats, the Dover boat is the largest and most complete. It has many features in common with Humber craft, in particular the individual withy ties used to fasten the planks together, rather than a continuous run of stitches found in the later examples from Goldcliff, the younger of the Caldicot and the Brigg crafts. Its location has strengthened speculation that these craft were involved in, or at least were capable of, cross-channel transport and trade (*ibid*).

Logboats from the Bronze and Iron Ages are more frequently found, and the tradition of using boats such as these along inland and coastal waterways continued into the medieval period. A recent boat find from the Norfolk Broads, dated to the 9th century AD is a good example (Albone *Pers Comm*. 2011). Many of these have been found in antiquity, during ditch digging and drainage work and a few have been systematically excavated under archaeological conditions. One of the best-excavated examples, and one subjected to full modern evaluation and integrated environmental analysis is the Hasholme log boat, found in the river Foulness in East Yorkshire (Millett and McGrail 1987). Decorated, and with a sophisticated transom arrangement at the prow and stern to make the vessel ‘seaworthy’, it

is over 12m long and is carved from a single oak tree felled between 322 and 277 BC and dating it to the Iron Age. It has been estimated that it would have seated passengers or a crew of twenty and had a carrying capacity of nearly nine tonnes (*ibid*: 2). Commentators have suggested this was clearly an item of some prestige, showing a degree of skill in both workmanship and operation (Head *et al* 1999: 132; Van de Noort 2004: 87). The work on the boat coincided with a systematic survey of the area by the local archaeological society (Halkon and Millett 1999). This demonstrated how the low-lying areas of East Yorkshire close to the boat find were settled and exploited in this period, and how the extensive wetlands of the river Foulness (in which the boat was found) linked the settlement via the Humber estuary to the outside world.

Boats are just one interesting example of how the finds from wetlands environments, with the added value of the preserved organic elements have added significantly to the archaeological record. The detail preserved in the planked boats has added knowledge of things such as craft skills, and of detailed carpentry and woodworking, but have taken the interpretation of our ancestors wider through their ability to travel and to trade (Van de Noort 2006).

2.3 Re-assessment of achievements of 30 years works: Monuments at Risk in England's Wetlands (MAREW)

When considering the management of archaeological sites, understanding how sites have been discovered and the processes involved are important. Many finds have been made by chance and rely heavily upon the recognition that the artefact in hand is of value as archaeology, as opposed to a curio. Likewise many sites, such as Harter's Hill or Shinewater have been discovered by chance. However a larger category of sites were located during the wetland surveys, and this is significant in our understanding of and for our knowledge of the overall resource. It also represents an approach to archaeology which is about categorisation and spatial resolution. The development of the methodologies used to survey wetlands and peatlands for archaeology is shown here; in particular how the greater integration of environmental techniques benefited the subject and

how new technologies were incorporated as they became available. There is no doubt that survey is important and continuing to develop these techniques allows greater recognition and better resolution and can provide increasing value from the resource. However, knowing where things are and how to manage this resource are two very different issues.

The year 2000 saw the close of the Humber Wetlands Project, and it also became a watershed moment. It represented a change in emphasis, which moved away from the search and record methodologies and recognised that managing the resource was a problem. During this period, funding from central sources was under pressure and it was clear that there were unlikely to be projects on the scale of the Fenlands Survey or Humber Wetlands Project again. At the same time English Heritage had spent up to six million pounds, on the various survey projects, and needed to take stock of the situation and evaluate the efficacy of the projects, and what they have delivered over that time. The first stage of this work was commissioning a project Monuments at Risk in England's Wetlands (Van de Noort *et al* 2002). This report is discussed is detail below (see 2.3), but it looked for the first time at the sorts of threats and issues that were facing sites such as desiccation, dewatering, and agriculture. It represented a more reflexive, issue based approach which began to address the problem of site management and how this could be improved.

2.4 Summary

Although this section has highlighted same of the key sites and discoveries made in wetlands, it has however, also focused on the discovery of sites and the methodologies employed by four major wetland projects. These are important because, although not a complete archive by any means, they represent a huge body of work, unparalleled elsewhere in archaeology. They are important in terms of the thinking they represented, and the theoretical framework of the time. The issue remains however that although survey work has recognised the value of the resource, the issue of how to manage the sites *in-situ* was not widely addressed. Site collection and understanding spatial resolution has therefore given way to a new era, where

the active management of sites is seen as both complex and necessary to ensure the survival of our wetland resource into the future. Preservation *in-situ*, protection and the on-going survival of this resource had still to be addressed by the archaeological community. The following chapters aim to explore the management of archaeological sites in more detail and how this aspect of archaeology has developed over the same period as the wetland surveys.

Chapter 3 Understanding archaeological management

3.1 History of archaeological legislation and policy

The aim of this chapter is to present a summary of the ideas, history and underlying structure of archaeological management in England, and particularly how the practice and theory of archaeological management have changed over the last 30 to 40 years. This timeframe is similar to that discussed for the wetlands surveys presented in Chapter 2, and this period forms the background to the analysis undertaken for this work. This section explores the context of the systems by which our archaeological sites are managed, particularly through the tenets of legislation and policy. The intention is to explore definitions, policies and terminologies which are used widely in the subject, in particular the theoretical basis of heritage management, Cultural Resource Management (CRM), Archaeological Heritage Management (AHM) and Archaeological Resource Management (ARM). Within this chapter there is also room for a discussion of the concepts such as 'preservation *in situ*', heritage management, and agri-environmentalism. The impact of these on the subject will also be evaluated.

The Society of Antiquaries celebrated its tercentenary in 2007 (see www.sal.org.uk), marking 300 years of the first organisation dedicated to understanding and researching ancient monuments in Britain. Even after a concerted campaign from the Society and others it took until 1882 before protection of monuments was put on the statutes (Wainwright 1985: 23, McGill 1995: 131). The first Ancient Monuments Act put a total of 50 monuments from England, Wales and Scotland on a 'schedule', a list that identified sites of national importance. General Augustus Pitt-Rivers, a former Soldier and leading archaeologist and politician of the time, was appointed the first Inspector of Ancient Monuments (Hodder 1999: 170). The first Scheduled Monuments were mainly monumental in scale and included the two prehistoric sites of Avebury and Stonehenge. This legislation forms the origin and basis of monument protection, where the principle of identifying and placing sites of national important on a protected list is still in place today. British legislation was however, already some way behind countries in continental Europe, particularly northern Europe, where known archaeological sites had been protected since the 17th century (Breeze

1993: 44). For example, in Sweden legislation prohibiting damage to protected monuments had been in place since 1666 (Cleere 1989b: 1; Kristiansen 1989: 25).

Although the initial legislation came into force in 1882, it was subsequently amended in 1900 and again in 1913 when the 'Board of Inspectors' was established. More amendments followed in 1931, which included the concept of protecting the setting of monuments. By that time over 3000 monuments had been placed on the Schedule (McGill 1995: 131). This figure had risen to approximately 20,000 by 1985 (Wainwright 1985: 25). In 1953 the Historic Monuments and Buildings Act was passed, which followed the example of the schedule of monuments with the creation of a 'listing' process for ancient buildings. The final and most current legislation was published in 1979 and is known as the Ancient Monuments and Archaeological Areas Act (www.legislation.gov.uk/ukpga/1979/46/pdfs/ukpga_19790046_en.pdf). This consolidated and updated all previous laws, and although amendments were added in 1983, it is still the law under which current heritage management and protection is governed (*ibid*: 23). A review of this act, known as Heritage Protection Reform (HPR) was initiated in March 2007 when the Department of Culture Media and Sport (DCMS) presented a new White Paper entitled 'Heritage Protection for the 21st century' (DCMS 2007, see also www.english-heritage.org.uk/protecting/heritage-protection). The intention was that this white paper would be followed by legislation with the aim of bringing significant reform to heritage governance. This was also to include a new unified designation system and a statutory requirement to maintain a regional database of sites. It would also have introduced to the existing management arena concepts of 'sustainability' (affordable long- term management solutions) and social 'inclusivity' that recognises that the resource should be accessible to every sector of society, so as not to exclude people by gender, race, class, sexuality, or disability (see DCMS 2008: 10). Critics have however suggested that this legislation would not have fully addressed issues of elitism and social inclusion within the heritage field as claimed (e.g. Waterton and Smith 2008).The new legislation was not

published by the then government and is now on hold, so the success, issues and outcomes of this review process have not been fully realised.

This legacy of legislation highlights how the heritage legislation performs against property and land ownership rights, and reveals a dichotomy between the controls on land in state and private ownership (Cleere 1989b: 11). Sweden, for example, is a country less intensively farmed with large areas of open common land and monuments present less of an intrinsic inconvenience. Broad state governance and protection of the ancient monuments has been possible and effective from an early date. Elsewhere in Europe, including in Britain where many monuments are in private hands and enclosed land is predominant, legislation has been opposed and has taken longer to reach the statutes. It is also suggested that this British legislation is less wide-ranging and prescriptive in its governance (Kristiansen 1989: 25). Some commentators have gone even further in suggesting that the early legislation in the UK was 'toothless' (Cleere 1989b: 1) particularly where property rights are paramount (*ibid*: 11).

The issues surrounding management of archaeological sites are clearly not new to the modern generation of archaeologists, but until recently the emphasis has been to protect nationally important monuments through designation. The current figures show there are upward of 19,500 monuments on the schedule, and around 500,000 buildings with listed status (see English Heritage Website, www.english-heritage.org.uk/protecting/heritage-protection/what-can-we-protect/scheduled-monuments/what-can-be-scheduled). Additionally, new types of asset lists have been created, such as the Register of Historic Parks and Gardens, which has 1580 entries, and the Register of Battlefields, which currently has 43 entries (*ibid*).

Although the numbers of sites that have been protected and designated has risen steadily from the original list of 50, and in spite of the number of Parliamentary Acts and Bills passed since 1882, the prognosis for many designated and un-designated archaeological sites is considered to be poor, with many sites considered to be in declining condition. This recognises that the balance in favour of land ownership rights outlined by Cleere and others (see above) have perhaps not favoured the heritage. The current situation is best illustrated by a recent report from English Heritage (see

2003). This report suggests that 'Between 1950 and 2001, the area of permanent grassland in England fell by 637,000 hectares. This is an area 17 times the size of the Isle of Wight, containing an estimated 14,000 archaeological sites.' Furthermore, 'Three quarters of England's wetlands are used for arable farming. Over 10,000 wetland monuments are estimated to have suffered damage in the last 50 years, mainly caused by agricultural drainage and ploughing.' In addition, it notes that 'Medieval ridge and furrow – once an extensive and highly characteristic landscape feature of the Midlands – is seriously threatened as grassland is ploughed up. An estimated 94% of East Midlands ridge and furrow has been destroyed. Surviving areas are still being lost.'

<table>
<tr><th>England</th><th>Wales</th><th>Scotland</th><th>N. Ireland</th></tr>
<tr><td colspan="4">European Conventions (Ratified)</td></tr>
<tr><td colspan="4">Valletta - The European Convention on the protection of Archaeological Heritage 1992
Ramsar - The Convention on Wetlands 1971 (established cultural importance of wetlands)</td></tr>
<tr><td colspan="4">Primary Legislation</td></tr>
<tr><td colspan="3">Ancient Monuments and Archaeological Areas Act (1979) - Established statutory protection for historic sites (Scheduled Monuments) and Listed buildings</td><td>Historic Monuments and Archaeological Objects Act (1995) Established Scheduled of Monuments and Listed buildings</td></tr>
<tr><td colspan="3">The National Heritage Act (1983) - Established 'Commissions' i.e. English Heritage, CADW (Wales) and Historic Scotland</td><td>In 2007 powers transferred from Department of Environment to the Northern Ireland Environment Agency (NIEA)</td></tr>
<tr><td colspan="4">Planning Policy and Guidance</td></tr>
<tr><td>Planning and Policy Statement 5 (2010) - Planning for the Historic Environment</td><td>Planning Policy Wales (2010) Chapter 6 - Conserving the Historic Environment</td><td>National Planning Policy Guideline 5 (1998) Archaeology and planning and, Scottish Planning Policy 23 (2010) – Planning and the Historic Environment</td><td>PPS 6 (1999) - Planning, Archaeology and the Built Heritage</td></tr>
<tr><td colspan="4">Peat deposits with geological designation protection</td></tr>
<tr><td colspan="3">Geological Conservation Review (GCR) of geological and geomorphological sites undepins designation as Sites of Special Scientific Interest (SSSI's)
Regionally Important Geological Sites (RIGS)</td><td>Areas of Special Scientific Interest (ASSI)</td></tr>
</table>

Table 3.1 Active legislation, policy and guidance in the UK that impact on decision making in wetlands (after Gearey et al 2010 see Table 7.1: 29)

3.2 Archaeology, preservation and planning

It has long been understood that archaeology is finite and non-renewable as a resource (e.g. Wainwright 1989: 168). The recognition of this has come to underpin the legislative and policy frameworks for heritage. One of the key principles that developed from this is known as 'preservation *in situ*'. This principle has become enshrined in the management of archaeology in the UK and many other countries in Europe, particularly in the context of archaeology within the planning process. The ideas associated with preservation were first incorporated into the planning guidance developed by the government in the late 1980s, through the Planning and Policy Guidance (PPG) notes. PPG 15 was primarily concerned with the built heritage such as listed buildings and conservation areas, whereas PPG 16 concentrated on archaeology (see DoE 1991, 1994), this section is mainly concerned with the latter.

Although both PPG 15 and 16 were combined and replaced by Planning Policy Statement 5: Planning for the Historic Environment (PPS5) on 23 March 2010 (DCLG 2010), the historical development and principles expressed are still relevant.

The Planning and Policy Guidance notes 16: Archaeology and Planning, and 15: Planning and the Historic Environment were published in 1990, to much acclaim, for example as stated by Darvill and Russell (2002: 1):

'November 1990 was a critical moment in the history of archaeological research in England. The publication [of PPG16]…consolidated existing best practice in this field and provided strong government endorsement for the emergent integration of archaeological resource management with the town and country planning system.' Although it did not have full legislative powers, it allowed archaeology to be regarded for the first time as a 'material consideration' within the planning process (Gurney 2003: 3). From English Heritage archaeologists to local government archaeological officers and curators, PPG 16 became the primary planning tool for the historic environment, against which the majority of heritage management decisions were determined. Written into the PPG 16 text were five assumptions or

understandings on which the guidance relied. These assumptions were firstly that archaeological remains are 'irreplaceable' (paragraph 3.); secondly that: 'Archaeological remains should be seen as a finite and non-renewable resource… Appropriate management is therefore essential to ensure that they survive in good condition...' (see paragraph 6.); thirdly that, for an understanding of preservation *in situ*, is '…where nationally important archaeological remains, whether scheduled or not, and their settings, are affected by proposed development there should be a presumption in favour of their physical preservation.' (paragraph 8.); fourthly that '…with the many demands of modern society, it is not always feasible to save all archaeological remains. The key question is where and how to strike the right balance…'; and fifthly that 'Cases involving archaeological remains of lesser importance will not always be so clear cut and planning authorities will need to weigh the relative importance of archaeology against other factors including the need for the proposed development…' (paragraph 8.). From this wording then, a decision-making process has developed that starts by looking firstly at whether a site has sufficient value to be preserved and then whether it can be maintained *in situ*. Within that, the embedded judgement on significance is an important part of the process. If it is not considered important enough to be preserved then an alternative needs to be found. This is stated as … 'If physical preservation *in situ* is not feasible, an archaeological excavation for the purposes of 'preservation by record' may be an acceptable alternative.' Although '... From the archaeological point of view this should be regarded as a second best option… Excavation means the total destruction of evidence… the preservation *in situ* of important archaeological remains is therefore nearly always to be preferred.' (paragraph 13.)

The issue of preservation *in situ* of the resource is therefore an essential component of current heritage management through the planning process, and is the primary goal of the legislation; PPG 16 then seeks to manage this process through the planning system. Where sites cannot be preserved a mitigation strategy which includes recording is the next available option.

As previously mentioned, PPG 15 and 16 have been combined and replaced with a new simplified Planning Statement (PPS 5), many of the established principles on preservation *in situ* remain, although the key phrases have been reworded. For example, PPS 5: Policy HE9.1 states, 'There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be…Once lost, heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact.' Although the planning policies may have changed, the underpinning principles have not.

Professional archaeology and the development of the contract sector is not a key component of this research, therefore it is only mentioned in passing as part of the current management landscape. It is clear however that PPG 16 has seen the development of an entirely new network of professional archaeologists, for whom the job of recording those sites which can not be preserved has become a profession. Although as Lawson (1993: 149) points out, the origins of the contracting archaeologist began in the 1970s with the rise of rescue archaeology, the idea of a 'unit' or contracting body is now an indentured part of the planning process, and a major tier of the archaeological framework (see also 3.5.3 below). By 2002, for example, in a 10 year review of PPG 16 on the profession the impact was considered to be very significant, and with an estimated 90% of archaeological fieldwork competed in England being undertaken within the context of PPG16 (Darvill and Russell 2002: 3). The development of this side of the profession has therefore been a profound outcome of PPG 16 and its successors

The role of preservation *in situ* is of considerable importance for the study of wetlands. Understanding this principle and its effect on our wetland heritage is one of the themes which will be explored further in this research. At its core there is a dichotomy. On the one hand, preservation *in situ* is a guiding principle which underpins heritage legislation and heritage management. On the other hand there is a physical challenge, which is created by the inherent difficulty of preserving organic archaeology *in situ*. The preservation of archaeological sites in wetland is extraordinarily complex and involves the, dynamic character of the environment in which the site is

located and the complicated physical circumstances on which the site depends for its preservation.

3.3 Monuments at risk

In 1993 English Heritage commissioned a comprehensive baseline survey of the state of the archaeological moments in Britain called the Monuments at Risk Survey, more widely known as the MARS project (Darvill and Wainwright 1994: 821). This project used a survey methodology in a similar way to those pioneered by the wetland surveys in the decades before (see Chapter 2.2), but instead of identifying and recording new sites, the focus of the MARS project was a more systematic quantification of the archaeological resource of England (Darvill and Fulton 1998a: 4). The project reasoned that although there had been a rapid expansion in the number of records added to archaeological databases and an increase in the knowledge of archaeological sites since 1945, there was a significant lack of quantified and consistent data on the condition, survival and extent of the resource, particularly by monument and period. At the same time the natural environment agenda had moved forward with survey and assessment of countryside change. The archaeological heritage had not been included in those surveys and the wider objective for MARS was to ensure that it would be well represented in the environmental conservation arena (Darvill and Wainwright 1994: 823).

The MARS project undertook survey work on monuments and sites nationwide and provides a baseline survey of their condition and survival (see Darvill and Fulton 1998a). Its objectives were to understand the resource better, to assess its present condition and to record the changes that had taken place to the sites encountered. This also required an analysis of the physical processes acting on sites and, if it was indentified that sites were being lost, what were the reasons and causes for this decline. The project also looked at the efficacy of legislation and management events introduced to protect sites and combat their loss (*ibid*: 193).

Other resource management research was also developed and embedded within the survey, in particular the modelling and understanding of monument decay. This is a process which identifies the major processes and

events that have affected change in the preservation of a site, and models the rate of decay and the decline in its condition (Darvill and Fulton 1998a: 16). Decay rates combined with condition evidence provided a powerful device to show that modern agencies at work in the country were effecting major change to monuments; it also provided a powerful tool for predicting future decline and loss of the archaeological resource and for measuring the risk to sites in the future (*ibid*: 216).

The field methodology of the project was relatively straightforward and involved undertaking condition assessment of sites and monuments along prescribed transects. The sample transects were designed and mapped to ensure a consistency of survey across the country and to cover all geographic regions (Bell 1998: 38-44). The approach also looked at the existing records including those housed in regional databases such as the Sites and Monuments Records, and furthermore incorporated data from aerial photographs (Darvill and Fulton 1998a: 34-5). In terms of publications the project was precluded by two academic papers which set the scene and outlined many of the principles (Darvill and Wainwright 1994; 1995). The results and analysis completed at the end of the project were published in a main report and an accessible summary volume (Darvill and Fulton 1998a; 1998b).

The strength of the MARS study was that it signalled a significant change in emphasis in cultural resource management in England; the survey work did for the overall archaeological resource what the later MAREW survey would do for wetland archaeology (see Chapter 2.3). This was not a survey to locate and identify previously unknown sites, but one which looked at the existing resource and sought to quantify its condition. It encompassed all types of monuments and introduced many techniques and tools of archaeological management. The ideas and concepts developed by the MARS project had not been tried on this scale before. In particular, the calculation of how much of the area of a monument had been lost (by percentage) was an important tool in looking at change (*ibid*: 28). An area of analysis which was also new to this study was the analysis of the tools of management, in particular those measures available to the curators to bring about change. This encompassed not just the archaeology-specific tools, but

also recognised the integrated role of nature conservation designations and in protecting historic landscapes and heritage sites (*ibid*: 208).

The project presented a bleak picture of the loss, destruction and contextual change to the sites and monuments and also to the traditional cultural landscapes in which these monuments existed. Overall, it was considered that some 16% of the recorded monuments had been destroyed by 1995 (Darvill and Fulton 1998a: 236), with the often-quoted headline figure that, on average, each day one archaeological monument or site had been lost since 1945 (English Heritage 2006: 2). Cultivation, particularly with sites being lost to the plough and other modern agricultural practices, was considered to be one of the key reasons for this loss of sites, aggravated by widespread changes in agriculture since World War II (Darvill and Fulton 1998a: 236). Other factors which caused significant changes to sites were erosion, such as that caused by weather, the actions of water (tides, rivers etc), animals and also visitors. A further issue was the scale of development, which through urban expansion, roads and quarrying was recognised as an increasing risk factor to rural sites, as well as to the built heritage in urban areas (Darvill and Fulton 1998a: 237).

Although there was much innovation and new material in the report, there can be some criticism of the methodology and results. In particular the approach of transects and regional archaeologies failed to understand the depth and distinctive nature of many of the geographical landforms. Furthermore, the analysis smoothed out the results and conclusions across the country and failed to identify local risk and regional variation in the causes of destruction. This lack of understanding was particularly apparent where the survey covered the wetlands areas, where truly regional and geographical phenomena were at work and led to a series of resource-specific surveys such as MAREW in 2001 (Van de Noort *et al* 2002), Monuments at Risk in Somerset's Peatlands or MARISP (see Brunning 2008), and latterly the upland peatlands survey (Quartermaine *et al* 2007). MAREW specifically targeted lowland wetlands, where it was felt area the original MARS project had failed to appreciate or identify the key issues. Similarly MARISP was focused at the sites in the Somerset Levels, which had not been well-represented in the MARS project.

Furthermore, although much work was done to quantify loss and decay and to understand the causes of this loss, MARS did not attempt to determine the value of what was left of damaged sites. In particular, it could not quantify what elements of a site gave it its importance, and whether or not this had been taken away or destroyed. In effect, what made the site, the site? Loss of significance is a concept that is now more familiar since the publication of Conservation Principles and Guidelines (Drury and McPherson 2008). It is however important when assessing damage to look at the core values of the site, and see at the point of assessment whether that core value has been altered, damaged or destroyed. It is necessary to do this in order to determine whether a site deserves its status, deserves to be actively managed or even deserves to have statutory protection. Loss of earthworks and loss of buried remains though ploughing can both reduce the core significance of a site to a greater or lesser degree.

Nevertheless, the MARS survey was at the forefront of a significant change in emphasis in archaeology, and was partly responsible for introducing a change in the focus towards heritage management research. English Heritage has continually sought to build on the baseline provided by MARS, in particular a pilot study called Scheduled Monuments at Risk (SM@R: 2), which was undertaken in the East Midlands and has now been rolled out across the country in attempt to indentify those sites most at threat and to find solutions to protect and enhance their management (e.g. Humble 2002). In terms of methodology and understanding of heritage management, the MARS survey also provides much material that was new and was able to adapt the conclusions in response to the different geographical areas and landforms. Perhaps a testament to the thorough nature of the original MARS survey was that although many of the agencies at work were very specific and different to those in 'dryland' areas, the conclusions reached by MAREW were broadly similar. This reinforced the fact that in spite of the additional complexities of wetland environments, agricultural 'improvement', such as drainage, or conversion of pasture to arable, was the main cause of the loss of sites identified by both the MARS and the MAREW projects (Van de Noort *et al* 2002: 22-23).

One of the main problems which has been blamed for the rapid degradation of Scheduled sites was what was termed 'Class Consent', a series of qualified exemptions, built into the 1979 act, which allowed certain activities to continue (see Table 3.2 below) on monuments throughout the country.

Class	Consent covered
I	Agricultural, horticultural or forestry works. Being works of the same kind as works previously executed during the period of five years immediately preceding the coming into operation of the order
II	Work executed more than 10m below ground by the National Coal Boards and others
III	Works executed by the British Waterways Board
IV	Works for the repair and maintenance of machinery
V	Works that are essential for the purpose of health and safety

Table 3.2 'Consents' by Class (after Wainwright 1985: 25)

Class I consent, especially for sites in rural locations, has been a significant area of concern for archaeologists, and the situation for protected monuments in particular is one of a resource under threat. Here the headlines from English Heritage 2003 documents highlight the problem,

- Nearly 3000 Scheduled Ancient Monuments are under cultivation.
- One third of all monuments in the East Midlands region are vulnerable to agriculture
- Over a quarter of the monument in the Stonehenge and Avebury World Heritage Sites are under damaging arable cultivation.
- More than half of the long barrows on the Gloucestershire Cotswolds, more than two thirds of those in Hampshire, and four fifths of those on the Lincolnshire Wolds have been destroyed or damaged by ploughing.
- Fewer than 10 out of 1200 burial mounds in Essex now survive as earthworks. The others, including the entire county's long barrows, are ploughed flat.
- Only 2 out of 39 Bronze Age metalwork hoards recovered from Norfolk in the last 30 years had not been disturbed by agriculture.
- Ploughing is damaging over 100 Anglo-Saxon cemeteries in Norfolk and Suffolk.

The problem may not be with class consent *per se* (see agri-environments section below), but the legislation and the use of agricultural exemptions did not foresee, or failed to take into account, the rapid changes in mechanisation, the coming of the Common Agricultural Policy and the development of large scale 'agri-business'. Even though operations on ploughed sites were allowed to continue, it is what English Heritage calls '…the long term corrosive effects of repetitive ploughing' (*ibid*) that may have been caused by larger, heavier and more powerful machinery, deeper ploughs and the intensification of the agricultural process. This includes activities such as sub-soiling, mole ploughing and the use of de-stoning machines in the preparation of deep seedbeds for root crops such as potatoes. English Heritage research has suggested that modern tractors are ten times more powerful and eight times heavier than a typical tractor from the 1940. This makes modern ploughing more destructive, and the heavier machinery increases the need for sub-soiling to counteract soil compaction (English Heritage 2003). In addition the same report also noted that as the new methods of seed bed cultivation for root crops, as well as migration of cropping to avoid diseases, deepens the impacts of ploughing on areas which been less intensively cultivated in the past (*ibid*).

3.4 Understanding 'heritage' and the development of Archaeological Heritage Management

Looking at legislation and the current state of the resource is one strand of heritage management. It is however also necessary to look at the origins of the academic discipline and the theoretical position that underpins management practice.

The term heritage derives from seeing heritage as 'evidence of the past' and at the same time something 'inherited' or 'transmitted from' the past (Collins 1992: 605). It is in this 'relationship' with inheritance which provides the contextual and intellectual framework, although the concept of that which has yet to be passed on is also important (Howard 2003: 6). Archaeological remains provide direct evidence of previous human activity, and those who curate or study these remains have provided much of the stimulus for our

study and understanding of what constitutes heritage in an intellectual capacity (*ibid*: 8). The value of heritage is however often considered to lie in its authenticity (McManamon and Hatton 2000: 1), although the concept of understanding involves assessment and interpretation, with all the inherent biases and issues associated with that (see Lowenthal 1996). Something like an English landscape, for example, is more complex. It could include archaeological sites but it is also a historical inheritance, with ancient woodland, field patterns and visible remains that form an archaeological context. This landscape has built up and developed over time, and provides a direct link with our ancestors who also inhabited and used this landscape and at the same time it has been delivered to us as a historical asset. An object or site 'tells a story' or can be used or interpreted to provide us with an experience of the past. In the same way, evidence about the past is transmitted to us through these experiences. Heritage in this way is commonly linked and important in helping to define attitudes towards social identity, belonging, cultural cohesion, and social continuity, through things like tradition, shared cultural values and engendering ideas of belonging (Cleere 1989b: 6-7; Hodder 1999: 162).

If it is understood that our heritage acts as a cultural reference between past and present, there then arise some very real dichotomies in its management. Heritage management is on the one hand preservation of the physical remains, and on the other it involves a more complex conceptual relationship that people have with the past. There is a need to curate this resource, but there is also a need to enable people to interact with it, and to understand and interpret it. There is also a perceived need to leave our own legacy. Therefore, managing 'our' past in the present is important in providing a rationale for the preserving of the resource for the future. Even if the past is perceived as belonging to us all, there is still a job of curating or managing the physical aspects of it. Ultimately as Hodder (*ibid*) suggests 'archaeologists have a duty to be responsible for what they find' and this means keeping our own house in order. In this endeavour, there is however a shared responsibility between Government, non-governmental organisations, charities, and individual landowners who share the role to manage the archaeological resource.

From Cultural Resource Management to Archaeological Heritage Management

Heritage management as a specialist discipline is still a relatively new concept, and it is only in the last three to four decades that a practical and theoretical approach has been widely discussed and characterised (Saunders 1989: 152). It is considered that '…this new field of human endeavour is concerned with the identification, protection, preservation and presentation to the general public of the material remains of the past, of whatever period and in whichever region or country' (Cleere 1993: 400).

Many academics now also recognise that heritage management is a distinct discipline (e.g. Howard 2003: 14), although there are some who feel more attention should be paid to establishing tighter definitions and boundaries for the subject (e.g. McManamon and Hatton 2000: 4). In particular that Archaeological Heritage Management is still striving for a 'basic philosophy and a common methodology', and to 'define its objectives' against the background of recent social and economic changes (Cleere 1989a: xxiv).

Heritage management has its origins in America in the 1970s with the implementation of new legislation (Cleere 1993: 400). In the United States laws passed between 1906 and 1969 were amalgamated during Richard Nixon's presidency in 1971 (and 1974) into a broad and comprehensive legislation. This offered protection for the antiquities, funding to undertake work on state lands, and also established the basis for the codes of Environmental Impact Assessment (EIA) (Renfrew and Bahn 1991: 470). The new American legislations established a need for practical solutions to problems which were considered unique to the north American context, in which the management of public space was brought together with the conservation needs of the archaeological and natural resource (Cleere 1989b: 4). From the inherent need to provide structures for the management of the public space evolved the discipline known as Cultural Resource Management (see McManamon and Hatton 2000: 1). CRM was initially written as a series of management case studies which developed from the legislation, and this was followed by publications which sought to place

heritage management in a wider academic framework (e.g. Lipe 1974; McGimsey 1972; Lipe 1984). The use of the word 'culture' in CRM is a considered choice, and was preferred in an American context where the emphasis was on the curation of the National Parks and the ancestral and cultural remains of Native Americans. Here, the use of 'heritage' in particular was considered to lack authenticity, and reflected an interaction with the past which demanded reinterpretation and intervention (McManamon and Hatton 2000: 1).

CRM and its principles have also been translated to a northern European context, where Archaeological Heritage Management has become the preferred and favoured term (Cleere 1993: 400). The phrase 'heritage' is often favoured as it tends to make a distinction between 'natural' and 'man-made' resources (Saunders 1989: 152), although for some commentators this distinction is not necessarily apparent (c.f. Harrison 1995). Heritage management has also been further refined in the archaeological field, to more discipline-specific terms such as Archaeological Resource Management after Hunter and Ralston's 1993 book of the same title and Archaeological Heritage Management after Cleere (1989). Heritage may also be a preferred term in areas where culture has a more pejorative meaning (e.g. Hamlin 2000: 68), although both heritage and culture are contested concepts (e.g. Howard 2003: 1).

In the introduction to their 1993 work, Hunter and Ralston argued that what they wanted to represent was specifically archaeological in character, not necessarily cultural, and that they preferred 'resource' as a more correct term for archaeological remains rather than heritage, which is more complex in its origins (*ibid*: vii). In academic terms, again following the American academic tradition, authors such as Davis (1989: 275 - 279) have also begun to recognise that Archaeological Heritage Management within the broader framework of British archaeology is distinct enough to be recognised as a sub-discipline. However, as Cleere (1989b: 15) points out, its development alongside that of mainstream archaeology has been uncoordinated or necessarily deliberate. In spite of the trend towards Archaeological Heritage Management, Cultural Resource Management is still the favoured term used by many European commentators as it is considered more encompassing

(e.g. Williams 2006). Culture is also still a widely used and understood term when linked to organisations such as UNESCO, and is associated with resource management for World Heritage Sites, and studies on cultural landscapes (e.g. Fowler 2003). Archaeological Heritage Management in an international context has also become more established, especially since 1992 when representatives from the members of the Council of Europe signed the European Convention on the Protection of the Archaeological Heritage, known more widely as the Valletta Convention (Cleere 1993: 400). The convention has led to the development of organisations such as the International Committee on Archaeological Heritage Management (ICAHM), which develops and debates policy the International Council on Monuments and Sites (www.icomos.org/icahm) (see also O'Keefe 1993: 46).

Archaeological Heritage Management in the UK: Structures and frameworks (see also Table 3.3 below)

As mentioned in the previous section, management of the archaeological resource has only recently developed as a discipline within archaeology. Likewise, the analysis and understanding of the issues involved have only been available through publication since the late 1970s and early 1980s (e.g. Lipe 1984). Syntheses of the recent situation are therefore relatively scarce, with only a handful of studies able to provide and overview (e.g. Cleere 1984; 1989; Williams 2006). Hunter and Ralston's Archaeological Resource Management in the United Kingdom (1993) is therefore still a relevant text. It provides a contextual background to the subject and a summary of the development of the subject area in the UK up until the early 1990s. It is recognised here that there have also been significant changes in legislation and the policy framework since its publication: these issues and the current thinking will be discussed later in this chapter (see Chapter 3.6), and again under the debate on Value in Chapter 4. Hunter and Ralston were however aware of rapid policy development at the time, and the legacy of change is very apparent in the book, in particular with the comment that 'Archaeology's past, present and - no doubt - its future, will continue to be inhabited by the legacy of its historical structure' (*ibid*: 43).

Organ-isation	Formerly	Type of organ-isation	Policy areas	Over-arching Govt. body
DCMS (Department of Culture, Media and Sport)	Formed in 1997 from the Dept. of National Heritage and it's predecessor, the Dept. of Environment (DoE)	Govt. Dept.	The Secretary of State has governance over heritage, museums, culture and associated issues, including the 1979 and 1981 heritage acts	N/A
DEFRA (Department of Environment, Farming and Rural Affairs)	Formed in 2001 from a merger of MAFF (Ministry of Agriculture, Fisheries and Food) and DETR (Dept of Environment, Transport and the Regions)	Govt. Dept.	The Secretary of States has governance over environmental protection, food, rural areas, agriculture and fisheries, including wildlife and countryside acts	N/A
DCLG (Department of Communities and Local Government)	Formed in 2001	Govt. Dept.	The Secretary of States has governance over regeneration, housing planning regulations and planning policy, including the heritage planning policy PPS5	N/A
English Heritage (Full Title: Historic Buildings and Monuments Commission for England)	Formerly the duties of EH were undertaken by Ministry of Works and then transferred to the Department of Environment in 1962. EH formed 1991 to take on role of DoE but also merged the Royal Commission on the Historic Monuments of England (RCHME)	Arms Length Govt. Body (formerly known as quangos)	Heritage Delivery of heritage policy, Including grant aid and managing designated heritage assets	DCMS
Natural England	Formed in 2006 from a merger of the Rural Development Service, with the Countryside Agency and English Nature	Arms Length Govt. Body	Delivery of environmental policy, farming and rural matters, including Environmental Stewardship, and managing designated wildlife sites	DEFRA
Environment Agency	Formed in 1996, with a merger of the National Rivers Authority (NRA) and national pollution inspectorates	Arms Length Govt. Body	Delivery of policy relating to the 1995 Environment Act, but also flood risk, rivers, water policy frameworks and related issues	DEFRA

Table 3.3 Table showing the main government, regulatory and policy making bodies in England with an interest in wetlands, their history and relationship to central government.

In terms of management, for Hunter and Ralston archaeology can be divided into divided into three sections. These are the 'structure', 'frameworks' and 'practice', with the latter two perhaps better described as two main sub-headings of the former. The three will be discussed below.

Structure

The structure of archaeological management is considered to be largely an organisational one, with a network of archaeological practitioners present at either a central or local government level. The structure also includes non-governmental bodies, voluntary organisations, and the educational sector (*ibid*: 30). Whilst a number of these organisations, such as English Heritage and local government archaeologists, administer, underpin and provide the framework, other organisations deliver the practice and the training. Fowler (1993) however, also argues that there are other types of 'structures' at work in archaeology, which are of a more theoretical and contextual nature, but are nevertheless important. He sees the structure as a 'matrix', which is provided by the current economic and political climate, but where the heritage manager has the additional responsibility of providing the intellectual and social value of our archaeological heritage (Fowler 1993: 7). The structure also has a historical legacy, which has had an impact on past and present developments but can also have an impact on future policy. This is apparent through the inheritances of previous legislation shown by the dichotomies identified between the differing fates of archaeology in public and private ownership in the United Kingdom (Cleere 1989b: 11). This is also apparent in the way that management policy developed in America where, although it was recognised as good practice, it only applied to sites and land in state control (e.g. Lipe 1984). In the UK this has also developed into a continuing tension between the theory and practice of archaeological resource management. This is embodied in the ongoing archaeological debates between empirical and theoretical approaches and between the intellectual and practical exponents of the subject (e.g. Hodder 1993); a debate which is still being discussed today, with reference to the lack of discourse between archaeologists in universities and those in field units (e.g. Bradley 2006).

Another integral part of what is considered the structure of heritage management is the archaeological 'databases' (Fraser 1993: 19). Starting with the original Schedule from 1886, databases have developed and morphed into the multi-functional records of today, which include sites and monuments, maps, listed buildings, finds and antiquarian references. Perhaps the most important databases are the Schedule, and the register for buildings, parks and gardens and battlefields. Regionally, databases such as the Historic Environment Record are also significant. Historical legacy continues to play a role in diversity and fragmentation of databases which prevents working from a single platform. The responsibility for maintaining, developing and interpreting these databases has an impact on all the organisations and sectors of archaeology and is another vital part of the structure. The protection of these resources as usable databases to enable future studies is seen as a vital part of Archaeological Heritage Management (Cleere 1989b: 9).

Frameworks

Frameworks are the components that underpin the structural element of archaeological management. This included the Ancient Monument legislation, with the inherent historical legacy, but also other related laws including those governing listed buildings and the portable antiquities legislation (which was commonly known as treasure trove, and not related to the current Portable Antiquities Scheme). As editors, Hunter and Ralston chose to include elements of wider historic fabric as part of the framework of archaeology, and included sections on buildings, in particular ecclesiastical buildings such as churches and cathedrals (Bianco 1993: 89-99), and sites from different types of environment, such as underwater archaeology (Firth 1993: 65- 76). Their definition was, however, relatively narrow and they primarily chose to focus on the roles of English Heritage and local government.

English Heritage, in particular in its role of establishing and upholding standards of heritage management nationally, and controlling the schedules, managing monuments, and funding research, should be seen as one of cornerstones of the framework. It sits alongside the work and curatorial role

of local authority archaeologists, in particular the use of PPG 16 to deliver archaeological advice within the planning process (e.g. Baker 1993: 100-14; Grenville 1993: 125-33). However, English Heritage provides a very different function to that of the local authority archaeologists and it is through the provision of development control at the planning stage that the latter organisations make the majority of day-to-day heritage management decisions.

The role of government organisations, such as the (then) Countryside Commission and the Nature Conservancy Council, have been given considerable prominence for their role in managing the historic landscape elsewhere (e.g. Wainwright1989: 164, Dormer 1999: 55). The role of these other agencies was, however, omitted by Hunter and Ralston and only referred to in passing (e.g. 1993: 32). Similarly non-governmental organisations, in particular the Council for British Archaeology (CBA) and the Institute for Field Archaeologists (now: the Institute for Archaeologists; IfA), were likewise omitted or only briefly mentioned within the frameworks section (e.g. Grenville 1993). Many bodies, such as Natural England, actively seek to manage and curate important archaeological sites through environmental stewardship, thereby taking an active role in the framework of archaeology (see 3.8 below). Likewise other groups, even though of a non-statutory nature, continue to be active in this field. The CBA , for example, are a statutory consultee on all Listed Building consents, thereby having an active consultative role in heritage management (Walker 2008: 64).

Practice

The third section involved the 'practice' of archaeological management, and included devices such as the assessment criteria for selecting monuments or in the developments in the field of remote sensing (e.g. Bewley 1993; Gaffney and Gater 1993: 192), and sectors such as museums, and museum archaeology and practice (Pearce 1993). It also provides an analysis of the role of the archaeologist acting as contractor or consultant (Lawson 1993; Collcutt 1993). This is interesting, as it represents attempts to document and synthesise the development of contract archaeology, which at the time Hunter and Ralston's book was published was

seen to represent one of the largest changes in modern archaeological practice. For example, Lawson suggested that the development of archaeological 'units' and contractors '…encapsulate two significant developments in archaeology in the last two decades' (1993: 49). Today much of this practice may be seen as commonplace, and although it has only a passing relevance to this thesis, it is still a part of the wider context and is significant in the development and current position of heritage management.

The legacy of legislation

As discussed above, the legacy of legislation has heavily influenced the present position, something recognised by Hunter and Ralston (1993b: 43). In terms of a summary, this legacy could potentially be divided into three main areas.

Firstly, the work of antiquarians in the 18th and 19th centuries led to beginnings of the exploration and recording of the sites and the preservation of known antiquities through legislation (see 3.2 above).

Secondly, the need for site management began to be seen through the development of what is described variously as the archaeological 'database' (e.g. Cleere 1989b; Fraser 1993) or 'matrix' (e.g. Fowler 1993). Listings of important sites were also developed at this time, but this was mainly the process of excavation and discovery, particularly through the many large set-piece excavations that provided the context for future public interest and understanding. For example, archaeologists working on key excavations, such as the Sutton Hoo Ship burial and at Star Carr (see Chapter 2.1.3), were able to show what survived below the ground, and the quality of what could be preserved. Furthermore they introduced rigour to the process of information recovery.

Thirdly, the present phase is one where understanding has developed but where heritage management or wanting to preserve the best sites in perpetuity starts to become an issue. This has come, perhaps, with the realisation that sites or buildings were being lost without being recorded or that sites were beginning to decay and deteriorate (Cleere 1989b). From this developed the understanding that the principle and function of legislation is to preserve sites, therefore management is required to slow down the

deterioration, or to conserve what survives. What also developed at the same time were government organisations such as English Heritage, set up specifically to provide advice and to manage the national resource. Also, non-government organisations (NGOs) such as RESCUE (Cleere 1989b: 4) were formed as pressure groups to campaign for greater protection of the cultural resource.

These three broad paradigms have not been contiguous, and in some subject areas this has happened at different times. For standing buildings and built heritage for example the main planning legislation has come later than for monuments; however preservation and enforcement has been more integrated into legislation from an earlier point (Suddards 1993: 77).

By contrast, in wetland archaeology, work to understand and discover sites has only just come to an end by the end of the 20th century. This work was typified by the search, discovery and mapping methodology of the various wetland survey projects discussed in Chapter 2. The change in emphasis from survey to understanding and managing this resource has only really occurred within the last few years.

CRM and AHM in wetlands

Although the analysis presented here focuses on preservation of sites which are archaeological in nature, the separation of culture from its natural environment in wetlands is neither possible, nor desirable. Managing archaeological sites and monuments in a wetland therefore requires a holistic resource-based approach. It is not about consolidating single monuments, nor is it strictly about heritage management, as the emphasis is as much on the conservation of the natural (palaeo-) environment, as a way of safeguarding the archaeological information contained within. In this respect, the management of archaeology in wetlands has come full circle. The required style of management for wetlands follows more closely the original US agenda established through CRM in the 1970s. Creating environmental impact assessments which look at both the cultural and the natural environments can provide the information required to inform a decision. It is clear, however, from the extensive literature available that the heritage management of archaeological sites in wetlands was not considered by many

of these early commentators. Wetlands are, for example, absent from the commentaries presented in Hunter and Ralston (1993a), or in Cleere (1989). The confusion in the role of CRM over natural or man-made resources may have created an artificial divide. Wetlands are also often seen as the preserve of the natural environment lobby, which were similarly ignored in the discussions of Hunter and Ralston. Perhaps the biggest issue is still the way in which the archaeology of wetlands and its studies are seen as a small sub-discipline of archaeology as a whole and not widely recognised for their wider cultural context.

3.5 AHM in the UK: The current position

Although the matrix and structure of archaeology are broadly similar to that presented in the 1990s, there have been broad policy and legislative changes since that time, as well as advances made in specific subject areas. A few examples will be outlined below to place this work in context.

After Fraser's (1993) summary on databases, for example, developments in specific database software means that ever more complex information such as digital archives, photographs or the rectified plots of cropmarks can be incorporated. A number of features that were excluded (*ibid*: 19), such as listed buildings, natural historical and non-human biological records have now begun to be integrated into the county-based Sites and Monuments Records. These were once the cornerstone of the archaeological records in the English county system and are now increasingly being upgraded to become a Historic Environment Record by the inclusion of ever more varied information. Some county records have also been made available as a web resource, such as in Somerset (www.somerset.gov.uk/heritage) and Norfolk (www.heritage.norfolk.gov.uk). However, the problems of synthesising large data sets for web production and the cost of delivery has prevented this from becoming more widespread (Plouviez *Pers Comm*.).

There have also been moves towards the creation of a national heritage dataset, by amalgamating the centrally held National Monuments Record (NMR) with county datasets. This was designed to target and enable the development of a more strategic and focused historic environment policy

and to deliver multiple objectives for both historic and biological conservation, particularly at a governmental level. To that end there have been moves by a partnership of organisations to use this type of approach in the delivery of Environmental Stewardship. Various approaches have been tried such as the Selected National Heritage Dataset (SHND) and Selected Heritage Inventory for Natural England (SHINE), on a limited scale (see www.algao.org.uk/Cttees/Countryside/ES-ELS.htm). This wider application, including the details of delivery and inclusion of records, has been much under discussion during the period of time in which this research was undertaken and has not yet been finalised. Inconsistency is still a problem, even though this was highlighted as early as the 1990s (Fraser 1993). In the case of targeting, the only heritage dataset held nationally is the NMR (www.pastscape.org), which includes the Schedule of monuments, and the registers of Listed Buildings, Heritage Parks, Gardens and Battlefields. Together, these represent a very small percentage of the monuments and sites recorded in the county HERs. Other collections of material are also available online, such as archaeological excavation archives presented by the Archaeological Data Service (www.ads.ahds.ac.uk/catalouge). The NMR is managed by English Heritage and also holds national collections of historical images and aerial photographs.

There have also been other initiatives, which have aimed to provide supplementary management guidance and advice. Perhaps the most successful is the cross-boundary and cross-disciplinary methodology developed for Landscape Character Assessment, from which developed Joint Character Areas (JCAs) and the Character of England map (www.countryside.gov.uk/LAR/landscape/CC/jca). The aim of the project was to establish a network of areas which share common character attributes, irrespective of administrative boundaries. The underlying principle is an understanding that landscape character is a product of both geographical and historical attributes, and that areas can share the same physical characteristics, as well as having similar natural history and biodiversity. It also recognises that archaeology and historic practices of landuse and building also contribute to the overall character of an area. The project was initiated by the Countryside Commission and English Nature in 1996, English

Heritage has contributed with funding for Historic Landscape Character (HLC) assessment and the wider project has been latterly promoted through Natural England.

An area where archaeological management has seen a significant change is to the 'frameworks'. In all the areas where Hunter and Ralston outlined policy in existence in the 1990s, there have been developments. This includes changes in legislation, protection of monuments and listed buildings, and the role of local authorities. One good example of this is illustrated by the Northern Ireland experience. In 1993, Hamlin published an overview of the current variations in legislation relevant to Northern Ireland (Hamlin 1993: 131). Devolution and re-organisation of service delivery has since created significant changes (see O' Neil 2007). Likewise in England there have been significant developments since Breeze's legislative outline (1993: 44-55). A government re-organisation in 1996 placed the heritage sector under the new Department of Culture Media and Sport (DCMS), and a new heritage White Paper has recently been published (see 3.2.above). The role of English Heritage is also changing and the picture presented by Saunders (1989) and Thomas (1993) is now dated. Although many of the duties and functions are the same, the organisational landscape in which English Heritage operates is now different.

Hunter and Ralston also provided an analysis of the legal framework associated with what was known as Treasure Trove (see Longworth 1993). This has also been substantially updated, when in 1996 changes to the Treasure Act were made. This introduced a new finds recording programme know as the Portable Antiques Scheme (PAS), which was piloted in 1997 and then rolled out nation-wide in 2003 (www.finds.org.uk/background/history). The aims of the PAS were to deliver a significant change in the way that small finds are recorded, and in the way that finders are encouraged to report new discoveries. This has in turn led to significantly increased numbers of new treasure finds being reported and new sites and finds making their way onto archaeological databases every year (e.g. Lewis and Richards 2009: 8).

Many of the key management documents have been updated, even since 1993. The Management of Archaeological Projects was, for example,

published by English Heritage to facilitate better standards of project management (Andrews 1991: 1). More commonly known as MAP2, this has been one of the cornerstones of practical archaeology since its publication. It has now been replaced, by Management of Research Projects in the Historic Environment or MoRPHE (Lee 2006). This is aimed specifically at research projects, but looks to provide wider sector guidance in shaping the management of projects for English Heritage and commercial practitioners alike.

It is widely recognised that major changes in the frameworks and structure of archaeology have also been recognised in the way in which the profession is now funded (e.g. Blockley 1995: 102). Although the majority of archaeological managers in England (e.g. English Heritage, local government) are still largely resourced by central government, the scenario has seen a net reduction in funding over a ten year period, a continuation from the picture presented in 1993 (Baker 1993:142). In contrast, the rise of work and intervention made by the commercial sector has risen. Funding for projects outside the commercial sector has also become more complex since the launch of the National Lottery and its funding dispensary the Heritage Lottery Fund (HLF). The HLF is and has been a major source of funding for all sorts of heritage projects over a period of about 10 years. There are also new sources available for archaeology, but these have become to some degree more specialised. A good example would be the Aggregates Levies Sustainability Fund (ALSF), which is effectively a tax on aggregates producers, re-distributed by Natural England for heritage or conservation-led projects. This has provided a considerable impetus for the development of archaeological research since its launch (e.g. Hill *et al* 2008). The admissions and grant criteria are tied to archaeological issues relating to gravel and aggregates producing areas (*ibid*: 1).

3.6 Heritage and the rural environment

Rural areas are not necessarily only defined by region or geographical landscape as such, but also by the different economic drivers, which reflect diverse social and environmental factors. These are dominated by the agricultural sector, and are regulated, influenced and defined by different

businesses, organisations and government agencies from that of the heritage sector. Rural landscapes also tend to be the main area of interest for the natural environment conservation lobby, for which conservation and preservation have different meaning from heritage management.
The historic component of our rural landscapes, and the interaction between archaeology and conservation is a wide ranging subject, much of which is outside is outside the scope of this work. However, as shown by the MARS report, it is difficult to look at the loss of archaeological sites in rural areas without discussing the context of landscape change. The protection of assets and the theoretical process of management need to be coupled with a look at a wider understanding of site preservation dynamics. This includes studying the current role of conservation policy and mechanisms in the rural environment.

This is particularly true of wetland environments, a large proportion of which are located in the rural environment. Here the burial environment for heritage assets is more fragile that that of other types of assets and once altered can often not be reverted. In addition, wetlands are separate and diverse habitats, with their own policies and lobbies, and competing demands, but also areas of shared responsibility and interest. It is therefore necessary to look at the wider issues involved in the management of this rural landscape. This way, a more holistic view of the factors and policies that currently affect wetlands can be gained. This section will look at this convergence between archaeology and nature conservation, and assess the underlying trends.

Cultivation and rural landscape

It is well documented that the twentieth century has seen radical change in the countryside. The legacy of two World Wars and the drive for national self sufficiency has led to large-scale agricultural development and intensification (e.g. McCrone 1999: 58). If it is understood that the case for the protection currently afforded to our heritage has in many cases not been sufficient to prevent damage, and is no longer a viable option for long-term site management, then the case for the denigration of natural environment assets is equally pressing. Archaeologists are not alone in having concerns

about the loss of resources, and a similar story emerges from nature conservation. In a similar way to the statistics provided in Ripping up History (English Heritage 2003), a report published by what was then English Nature entitled State of nature: Lowlands – future landscapes for wildlife provided the headline statistics (Townsend *et al* 2004). The report highlighted that there has been a 20% loss of hedgerow between 1984 and 1990, and a 97% loss of lowland unimproved grassland between 1930 and 1984. This is coupled with a loss of landscape features such as a reduction in the number of ponds from 6 ponds per km^2 in the pre-war period, to 1.7 ponds per km2 by 1996 (Townsend *et al* 2004: 18).

Underlying the statistics from the English Nature report, and something of value to archaeologists and heritage managers, is that these are all losses of features which represent the context of our sites, the wider historic landscape, and are features of the natural environment. This is coupled by the results of projects like the MARS survey and Scheduled Monuments at Risk, which has shown that nationally important archaeological monuments are being damaged, and that we appear to be losing hundreds of 'ordinary' archaeological sites as well.

If the situation makes uncomfortable reading for environmentalists and archaeologists, the English Nature figures make even worse reading when looking at wetlands. Collated figures from the report (see Table 3.4 below) suggest this may be one of the environments where the most significant changes have taken place.

As discussed in Chapter 2, wetlands are also a niche environment which has specific types of archaeology and cultural resources (e.g. palaeoenvironmental habitats). Along with loss of habitat, these valuable archaeological and cultural resources are being damaged and lost, along with the landscape context in which all these sites are found.

Wetland or wetland related habitat loss	
Lowland unimproved grassland	97% loss between 1930 and 1984 in England & Wales
Heathland	84% loss between 1800 and the late 1980s
Grazing marsh	Approximately 20,000 km2 of wet grassland were drained between 1940 and 1980. In the north Thames, 48% of grazing marshes were lost between 1935 and 1982, and 49% of the Ouse, Nene and Welland

	Washes were converted to arable between 1939 and 1981
Ponds	There have been heavy losses of ponds from infill and drainage with a 33% decline since the Second World War. This loss represents a drop from about six ponds per km2 pre-war to 1.7 ponds per km2 in 1996.
Fens	In East Anglia, fens declined from an estimated 3,400 km2 in 1637 to just 10 km2 by 1984
Lowland raised bog	C. 44% of the original 37,700 ha of bog has been drained, cut and claimed for agriculture, and cannot be regenerated in the short term. Just over 1% remains undisturbed, and the remainder is degraded to varying degrees

Table 3.4 Showing a summary of habitat loss for wetlands or wetland related (After Townsend et al 2004: 18)

Post war legacy

Until legislation was passed in 1988 (The Wildlife and Countryside Act), conservation has lagged behind archaeology with legal protection (Vittery 1985: 19). In particular, the highest tier of designation, Sites of Special Scientific Interest (SSSIs) were not afforded the statutory protection given to important archaeological sites until 1949 (Dormer 1999:46). This is over 60 years later than the ancient monuments legislation.

In the rural environment, where agriculture is the dominant economic activity, the thrust of governmental spending over the last 40 years or so has been for agricultural support (Potter 1999: 9), firstly through post-war government policy and then through European initiatives such as the Common Agricultural Policy (CAP). This provided a stable and consistently high market price for produce, but has also been considered as the primary driver behind arable intensification and landscape change (e.g. Cheshire 1985: 9 – 18). The CAP is only likely to be part of the story and advances in scale and use of machinery, drainage and fertilisers over this period have kept pace with policy changes. Potter (1999:10), for example, argues that alongside the CAP '... technological changes in agriculture would still have required the transformation of the lowland enclosed landscape'.

Whilst the causes may be debated, the result on the countryside has been marked, evidenced in particular through aspects such as landuse change, where studies show a clear and unambiguous trend for incremental conversion of pasture to arable (e.g. Middleton 2001). As Lambrick (1977: 30) and Mcinnes (1992: 243 - 245) have pointed out, marginal landscapes

are equally if not more at risk in the intensification process as the trend of conversion continued, both heavy clay soils and upland areas are brought under arable production with the application of modern methods. It can also be shown that wetland landscape, probably more so than other land types, are seriously at risk in this process (Van de Noort *et al* 2001; Townsend *et al* 2004). Well-advanced drainage methodology in the post-World War II period has led to wholesale conversion of former wetlands such as river meadows, fens and saltmarshes to arable land. Whilst wider economic developments in agriculture and technology may have created this situation, successive government policies in part driven by the European agenda have all contributed to this change, both through encouragement and financial incentive. In the 1970s, for example, grants for drainage were available for up to 55% of the cost (Lambrick 1977: 30). The impact of this has been seen on many archaeological sites including some of the case studies presented in later sections.

The effect on the historic resource has been devastating and well documented in studies like MARS. The detrimental effect of ploughing on the archaeological resource is one outcome, and it is not a difficult supposition to conclude that with more areas that were converted and ploughed, the greater the threat that archaeological sites would be damaged.

Historic landscape change

The historic resource is however not just about archaeological sites and a wider understanding of historic landscapes must be sought. The historic resource in this instance is also taken to mean landscape features such as field boundaries, in particular hedgerows, field banks and stone walls, but also village greens, ponds, ancient woodland, wood pasture and historic parkland. This can also encompass types of landscapes such as acid heath or upland moor/heath land that although essentially 'natural' have been created by a legacy of controlled use and management that dates back hundreds and sometimes thousands of years (e.g.Clark 1954; Spikens 1999); or lowland coastal grazing marsh where a legacy of 2000 years of habitat change and drainage has created unique and diverse landscapes (e.g. Rippon 2000: 145-63).

The landscape can be viewed in some respects as a large archaeological site, made up of changes that took place over a number of years and through different archaeological periods. Study of landscapes tends to focus on the later archaeological periods, as the surviving evidence is likely to be better preserved, although earlier field patterns and systems can be contained within these (e.g. Williamson 1988: 48-9; Martin and Satchell 2008: 1). In Suffolk, for example, a number of boundaries can be dated to at least the Late Saxon period. An example of a Late Saxon hedge was recently identified on a land charter dating to AD 1002, and can still be traced between the parishes of Lavenham and Long Melford (Fletcher 2006a). The 'Hooper method' of counting species to age a hedge has now been largely discredited in East Anglia (e.g. Barnes and Williamson 2006: 96), and this Saxon hedge provides a case in point: it has a low numbers of species per metre and looks no different to the many other later hedges in the district. It has survived the post Second World War modernisation, but when viewed was visually unremarkable, and linked like so many others to anthropogenic land control and management. It is essentially a natural commodity but it is also an archaeological feature of some considerable age. Landscape features such as field patterns are therefore not only reminders of the general age of our landscape but are often overlooked as historical and archaeological features during management (Martin and Satchell 2008: 230)

The other method of identifying this older landscape that has perhaps been more successful is Historic Landscape Characterisation (Suffolk County Council HLC see www.suffolk.gov.uk/environment/archaeology/landscapeprojects/historiclandscapecharacterisation.htm). Here the knowledge that older features can exist from documentation can be used to identify older landscape 'types', and then to analyse digitally mapped data sources to produce a picture of the survival of older landscapes. This interactive map data has a time depth element to it, particularly as current and former landuse can be assessed together. After the 1950s, land that has been cleared and modernised can be identified in this system but is categorised by using older maps to determine its previous landscape pattern. It is these projects that allow archaeologists to really identify the older

landscape and to use this knowledge to aid and improve the management of them.

What is clear is that fields, ditches, boundaries and woodland are all part of the pattern of human intervention imposed on the landscape over a considerable period of time. Large-scale agricultural changes threaten both the character and the survival of these features. Examples of whole-scale change which has altered the landscape character are common across England. I was also able to identify examples such as at Tannington in Suffolk during my work as the Historic Environment Countryside Officer (HECA) in the county (see Fletcher 2006b). Here the Suffolk Historic Landscape Character maps shows the predominant character of the landscape to be one of long co-axial fields that are thought to date to the medieval period. Like many estates the land in the immediate post-second World War period underwent rapid modernisation, supported by government policy and grants. By 1985 wholesale changes had been made, and it is estimated that over the whole estate of 9.32 km^2, 95.84 km of hedge boundaries were removed, an average of 10.28 km/km2.

Densities and averages per hectare vary across the country from low numbers in fen areas of Cambridgeshire to a high density of 14.7 km/ km^2 in Herefordshire (e.g. Westmacott and Worthington 1997; Parker 2001). The current average hedgerow densities for Suffolk are measured at 3.62 km per km^2 against an English average of 2.91 km per km^2 (Parker 2001: 21). The total hedgerow density at Tannington was over 10 km/km^2, and the losses have been severe at approximately 90%, which measures against the countrywide overall loss of 20% (see Towsend *et al* 2004). The Tannington example therefore represents a significant loss of historic features. It has been noted that it is often the older landscapes that have the higher densities and the ones that have suffered the most loss (see Baird and Tarrant 1973: Martin and Satchell 2008: 231). Along with the loss of biodiversity the area has lost historically interesting and archaeologically richer parts of the landscapes. In addition, when this landscape was improved, other features were also removed including nine medieval moats, seven pre-1800 farms and the former common land (see Fletcher 2006b). Likewise in other parishes entire woodlands were removed (see Fletcher 2005).

3.7 A change of emphasis, towards agri-environmentalism and Environmental Stewardship

Hedges, ditches and woodlands are all features which encompass the wider historic landscape and have been hard hit by modernisation, but as discussed the same has been true for other types of archaeological sites, which have all suffered through modernisation practices and the application of Class Consents (see Section 3.4.2 above). The recognition of this issue began in the 1970s with rising concern voiced by archaeological groups such as the CBA and others (e.g. Lambrick 1977; Hincliffe and Schadla-Hall 1980). They began to identify that the increasing speed of agricultural change was accelerating the rates at which sites and monuments were being destroyed. This recognition and the subsequent development of this agenda led directly to the MARS work. More recently English Heritage initiatives such as Monuments at Risk have been developed to continue to raise the profile of damage and to combat these issues (e.g. Humble 2001). More research into aspects of site preservation has been undertaken than ever before, particular for archaeology under agricultural land regimes such as ploughing (e.g. Oxford Archaeology East 2002).

Although these projects have informed heritage policy and helped to develop agendas, it is unlikely that they can make a significant difference on their own, and ultimately the long-term preservation of heritage in the rural environment depends on changes to the wider agricultural sector.

The legislation and policy framework in the agricultural sector is as wide and complex as the heritage sector, and more politically charged, and the rural landscape is managed in numerous different ways (Fairclough 1999: 27). Although archaeological legislation has been in place for much longer than those laws which govern nature conservation, it is the latter that are often perceived to be stronger, and conservation legalisation can be said to lead archaeology in its successes. In particular, the external pressure for the protection of wildlife species and habitats has the backing of European legislation and the wider international community (Cooke 1999: 126). It is also possible that the conservation sector has been more successful in demonstrating the value of wildlife and conservation in the public sphere,

where support for conservation initiatives is flourishing (*ibid*). In the past the reverse has probably been true and conservation organisations have recognised the value of the protection provided to archaeological sites by legislation (e.g. Vittery 1985: 19).

Mechanisms

In the last 15 years there has been a significant policy shift in the rural environment and now much of archaeological conservation policy has been driven by the so-called 'greening of the CAP' (Potter 1999: 11). In particular, there is a new policy area which is now known as 'agri-environmentalism' (Grenville 1999: 1). Agri-environment schemes were first launched in 1987 by the Ministry of Agriculture, Fisheries and Food (MAFF) (Ovenden *et al* 1998:955). This reflected the growing influence of environmental concerns on the agricultural sector and in particular the operations of MAFF (Dormer 1999: 29). The driver in policy terms was a European directive which allowed the designation of Environmentally Sensitive Areas (ESA), and was backed in England by legislation which enabled MAFF to identify and declare five such areas (McCrone 1999: 59). The pilot project was known as the ESA scheme, and essentially invited farmers, land managers and landowners to adopt different management practices in favour of natural environment, landscape and archaeological objectives. In return they would enter into a formal agreement under the terms of which subsidy or compensatory payments were made for the loss of income incurred in meeting the objectives (see Ovenden *et al* 1998: 955; McCrone 1999: 59). This in some respects reverses the trends in earlier MAFF policies which provided grants for arable improvements and drainage. Agri-environmentalism has therefore emerged as a significant part of the policy framework. Although it is underpinned by legislation, it provides an alternative economic mechanism to agri-business, which gives conservation objectives a relative economic value. The principal that underpins the framework is the concept of incentivisation, which is now a widely understood and recognised tool for management in the natural environment sector (e.g. Natural England 2009; Garrod *et al* 1994).

One issue that was quickly recognized with the ESA approach was that it created a perception that some areas of landscape were more valuable

than others (e.g. Blunden and Curry 1988). To join the ESA scheme a farmer therefore had to be in one of the designated regions. To avoid designating the entire country under the ESA, the approach taken was to create a parallel scheme known as Countryside Stewardship (CSS). This was to be based on objectives which were specific and tailored to the different landscape types around the country (Dormer 1999:52). The scheme was open to all, but the principle was that the scheme was competitive, with no guarantee of acceptance (*ibid*). Each holding or farm unit which applied to enter the scheme would be assessed for its suitability against environmental, landscape, archaeological or access criteria. The better the farm scored against these objectives the more likely it was to receive the subsidy payments.

MAFF has since been replaced by the Department of Farming and Rural Affairs (DEFRA). Likewise an amalgamation of DEFRA's arms-length delivery organisations, with both English Nature and the Countryside Commission produced Natural England. The Countryside Stewardship Scheme was in 2005 also replaced by a new system of Environmental Stewardship (ES). This has been described by Natural England (2010: ii) as, '... an agri-environment scheme that is open to all farmers and is funded by the UK Government and the European Union (EU). Farmers and land managers across England enter into voluntary management agreements with Natural England in order to deliver the scheme. In return for looking after England's countryside – our wildlife, landscapes, historic features and natural resources (soils and water) – and providing new opportunities for public access in some cases, ES provides farmers and land managers with a financial incentive that supports and rewards them for this work'.

This comprises a broad two tier system with an Entry and Higher Level Stewardship System (ELS and HLS), with an third tier to the scheme known as the Organic Level Scheme, specifically to encourage organic farming. Countryside Stewardship and the new schemes have been running in parallel since the 2005 launch. The former is now closed to new applicants and Entry and Higher Level Stewardship are the main system for the delivery of environmental benefits in rural areas. In a similar way to CS and ESA schemes, archaeology and the historic landscape are important

considerations within the scheme, forming one of the four main objectives; ES for example recognises that 'Archaeological features such as hill forts, burial chambers, hollow ways, ridge and furrow, sheep washes, traditional farm buildings and Second World War defensive structures all contribute to our rich historical heritage and landscape. They are often of ecological value, enriching landscape diversity and providing wildlife habitat. These features are an important record of our cultural development and where they occur on agricultural land it is important to protect and preserve them. Many features of archaeological interest are protected and preserved in wetlands with high water levels. The historic environment options will protect the features from further damage or erosion…' (Natural England 2010: 47-8).

The main incentivised options for historic environment features are outlined below (see Table 3.5 below), and these allow historic assets to be maintained under light cultivation, or removed from cultivation altogether. In addition there are specific preferences for archaeological sites in wetlands and for special features such as moats, ponds, or water meadows. Earthworks in pasture are not forgotten, but are managed under separate grassland options. Likewise payments can be made to help other types of historic landscape features such as maintenance of ancient woodland, hedges and old orchards.

Option	Value	Management Prescriptions	Payment
HD6 Crop establishment by direct drilling (non-rotational)	Annual crops are direct-drilled, in order to protect archaeological features below the surface from damage by ploughing or other deep cultivation Due to the damage caused by the deep root systems of some crops and from harvesting operations, certain crops may not be grown under this option	No growing of root crops, maize or energy crops Direct drilling all crops at a depth no greater than 30 mm No cultivation, sub-soiling, deep ploughing or mole-ploughing	£70 per ha
HD7 Arable reversion by natural regeneration	This option is designed to targeted at the most vulnerable features within arable or grass ley situations The purpose is to protect	Allowing the sward to establish by natural regeneration Managing the sward by grazing or topping	£500 per ha

	sub-surface features by ceasing cultivation and establishing permanent grassland by natural regeneration	Once established, the sward should be managed by grazing or cutting for hay	
HD8 Maintaining high water levels to protect archaeology	Features of archaeological interest that are protected and preserved in wetlands are vulnerable to drainage and agricultural improvement This option is designed to maintain current high water levels to protect underlying archaeological features from desiccation	Maintaining water levels at no more than 30 cm below the ground level at all times of the year Avoiding field operations and stocking when the land is wet No ploughing, sub-surface cultivation, re-seeding, chain harrowing or rolling Preventing the development of reeds, large sedges or scrub	£240 per ha
HD9 Maintenance of designed/ engineered water bodies	Designed or engineered water bodies such as millponds and formal water features enhance distinctive historic and landscape character and can provide valuable habitats for wildlife This option is designed to maintain both the designed or engineered water body and the associated features such as dams, retaining walls and sluices	Management tailored to individual features Annual maintenance inspections of masonry, brickwork, pointing or engineering structures Regular maintenance to avoid decay or deterioration of the fabric Use of traditional materials, techniques and craftsmanship	£295 per ha
HD10 Maintenance of traditional water meadows	These options are used to maintain or restore traditional management of water meadows Water meadows can be an important component of the distinctive historic and landscape character in parts of England They can also provide valuable habitats for wildlife and may provide an area of flood containment	Floating or drowning the water meadow for an agreed period of time each year Maintaining gutters, carriers or channels to encourage an even film of water approximately 25 mm deep to flow over the sward Once the land has dried out, the meadow must be managed by grazing and/or by hay-cutting	£350 per ha
HD11 Restoration of traditional water meadows	Water levels in traditionally managed water meadows, including catch meadows, are controlled using sluices and	The restored water meadows require planned implementation	£350 per ha

	hatches, a process known as floating or drowning the meadow		

Table 3.5 Options, management prescriptions and value per/ha for historic environment features under HLS (tabulated from Natural England 2010: 48-9)

To ensure the delivery of benefits to the historic environment the schemes are designed to include the whole farm or holding and compliance with the options are mandatory once the agreement is signed. New Historic Environment Advisers (HEA) positions have also been created in Natural England to oversee the creation of policies and targets. Likewise a number of Historic Environment Countryside Advisors (HECA) posts have been created in local authorities to ensure that information held in local authority databases is delivered as part of the HLS scheme. This ensures that all the stakeholders involved in the delivery of historic environment benefits have the right level of data to inform the plan, and a high enough level of understanding to develop beneficial policies, and deliver positive management outcomes.

Environmental Stewardship and archaeology

The successes of the early stewardship schemes such as ESA and CS for the natural and historic environment have begun to be documented (cf. Ovenden *et al* 1998; Middleton 2002; McCrone 1999:66). It is clear, however, that government agencies, in particular Natural England through Environmental Stewardship, are making a significant contribution to the preservation of the historic environment, largely through the reduction of tillage depths and the reversion of designated and undesignated archaeological sites from arable to pasture. Although this is hugely significant, it is largely unrecognised in academic literature, with few available recorded case studies and statistics. Through support and advocacy, as well as the development of research into the risks to sites from cultivation, the heritage sector is continuing to feed information into the debate about the damage to sites (e.g. Lambrick 1977; 2002). This has been successful in

continuing to keep archaeology and the protection of the historic environment as an attractive objective within the stewardship arena.

In the development of stewardship schemes, it was clearly felt that a real economic deficit exists between agri-business and conservation farming. The policy direction that has been taken is one which seeks to fill the deficit with incentivised payments for good farming practice. This is now the main mechanism for the delivery of archaeological benefits in the rural environment. The policy also recognises that good management for archaeology can also provide environmental benefits, thereby gaining multiple positives from a single approach.

What is uncertain, because the subject area is so recent, is how to measure the success of schemes such as ELS and HLS; more importantly whether or not they can remain viable in the long term. Gains made in the management of the archaeological sites and landscapes through the schemes can only be sustainable with a consistent long term approach.

There has been considerable recognition over the last thirty years of the contribution that the good stewardship of archaeological sites, particularly those in guardianship, can make to the preservation of habitats and species (e.g. Thomas and Wells 1999). In places such as Norfolk, where there has been an active policy of land purchase to protect archaeological assets, gains have also been made in conservation (e.g. Wade-Martins 1996: 8). Although this has not been widely replicated elsewhere in the country, there are a significant number of monuments and sites across the country in the care of the state, local authority or trust bodies which have a dual heritage and wildlife designation. I also know (from my role as Inspector of Ancient Monuments in Norfolk) that the scheduled Neolithic flint mines at Grimes Graves, in the guardianship of English Heritage are, for example, also an SSSI, protecting the presence and survival of good heath and acid grassland plant communities.

Early ecological survey work undertaken in the 1980s on large monuments in the South Downs and Wessex began to recognise and provide examples of the habitat survival in historic areas (e.g. Wells 1985). This has developed into an understanding that the stewardship of monuments should actively promote management to provide an environment where both

archaeology and rare species can survive (P. Wade-Martins *Pers Comm*.). Memoranda of understanding have now been signed between English Heritage and the agencies involved in nature conservation, firstly with English Nature in 1996 (Patterson and Wade Martins 1999: 145), now also with its successor organisation Natural England (Trow *Pers Comm*.). Advocacy of an integrated approach to monument management has likewise been recognised through English Heritage Monument Management Programmes (e.g. Patterson and Wade-Martins 1999: 145).

Archaeological and conservation needs can therefore be successfully aligned, in a way which benefits both parties.

Agri-environment schemes and wetlands

Provision has been made for the protection of wetland ecosystems in the Environmental Stewardship programmes. It is thereby understood that wetlands are recognised within the policies and agendas that underpin stewardship, and that those wetlands have a significant role to play in the rural environment. It also implicit in this stewardship philosophy that wetlands and peatlands can themselves be protected in a similar way to other conservation targets, in particular through the use of incentivised payments to farmers to improve practices. In addition, the Ministry of Agriculture, Fisheries and Food (MAFF), now the Department for Farming and Rural Affairs (DEFRA) have continued to develop a targeted approach to wetland ecosystems: many of the early Environmentally Sensitive Areas were wetland eco-systems such as the Norfolk Broads (McCrone 1999: 60). Although the Higher Level Scheme is now the main mechanism for delivery, the focus on fragile eco-systems remains.

It is not clear, however, given the short timescale in which the schemes have operated, and the complexity of the ecosystems involved, whether this approach will ultimately fare better or worse than other attempts to protect wetlands. The problem is that protecting the whole of the ecosystem and wetlands catchment is paramount in being able to control or develop policies that impact on the whole habitat. Differences in ownership and in management practices on neighbouring land could alter the local

environment but also affect the management across the wider wetland. Holistic approaches may still not be possible.

The historic environmental potential of wetlands and the need to protect wetland sites has also been recognised in the Higher Level Scheme, and has a set of associated options (See Table 3.3). As already discussed in Chapter 2, however, in historic environment terms protecting sites depends very much on them being visible and recognisable. Whilst the problem of the visibility of the resource is not an agri-environment issue, protecting heritage assets in wetlands has become possible under the scheme. In this instance, the issue for archaeologists becomes one of management and in particular whether preservation and protection are possible in these circumstances, especially as the management prescriptions provided under stewardship are relatively simplistic and seek simply to reverse the damaging land management. Again the holistic approach required to gain a reversal of the decline of the preservation environment may not be possible.
Perhaps the real value here is that the historic environment potential of wetlands has been recognised within Environmental Stewardship, and that management solutions are in place within the scheme. Furthermore, a mechanism has been provided which seeks to address the deficit between the economics of agribusiness and conservation of wetland environments through incentivisation.

Current issues

The legacy of agricultural policy and the impact of farming on the heritage resource have begun to be recognised in management literature produced by government bodies (e.g. English Heritage 2003). In turn this has led to the development of policies such as Heritage at Risk (Humble 2001). This policy is underpinned by research into the issues of loss and damage to resources (e.g. Darvill and Fulton 1998a). The archaeological literature has however been slow to document the phenomenon, with few texts produced (e.g. Grenville *et al* 1999). In particular, many of the studies of CRM or AHM have largely ignored altogether the rural and natural environments (e.g. Hunter and Ralston 1993); similarly, the roles of farming bodies such as DEFRA or Natural England, and conservation led groups such as the Wildlife

Trusts or the RSPB. The texts have tended instead to favour a narrow understanding of historic environment management based on legislative and planning frameworks.

Elsewhere however, the trend towards agri-environmentalism and the establishment of environmental stewardship schemes such as ESA have been greeted with general optimism amongst archaeological managers (McCrone 1999: 68). This is still a rapidly developing policy area however and the debates within archaeology of its relevance and efficacy are still being formulated. In particular, curators and other archaeological resource managers are still trying to find the parameters and terms of engagement in which the rapidly changing current agricultural system can help protect archaeological sites and landscapes (e.g. Fairclough 1999: 37; Grenville 1999: 1).

Recognition has also been made of the contribution that the active promotion of conservation and monument stewardship can make to both the historic and natural environment. Archaeological and conservation needs can and are now being successfully aligned through an integrated approach to their management. That Countryside and Environmental Stewardship can benefit archaeology and can add value to archaeological sites through the provision of a good conservation environment, is an important theme for the future. Understanding integrated management and recognition of added value are themes that will also be explored later in this thesis in relation to archaeological sites in wetlands (see Chapter 4). It is these integrated aspects of preservation that are the most relevant to wetlands and to this research, in particular whether shared policies on values can be applied to archaeological sites in wetlands to enable decisions to be made about the long-term survival of the archaeological resource.

3.8 Summary

Governments have long recognised the need for public policy on heritage (e.g. Kristianson 1989). Heritage management is essentially understanding and providing the framework by which legislation and policy can be delivered. In Britain, a position has been taken in which the protection of monuments has been recognised as a legislative concern of the state, and

dates back from the establishment of the Scheduled Monument list in the time of Pitt-Rivers. The state of heritage management in the UK (see also Table 3.4 above for summary) is therefore based on a long history of legislation against a background of changing social priorities. By way of summary, the current position appears to be based around four converging agendas:

Firstly, the application of physical management is underpinned by the historical legacy of legislative frameworks and the development of governmental curatorial roles through organisations such as local authorities and English Heritage (e.g. Saunders 1989). These roles are partly defined by the requirements to maintain, what Hunter and Ralston call the 'structure' of archaeology, such as the development and maintenance of archaeological databases. There are a number of other sectors and non-governmental organisations who have a role to play in managing and debating the legislation and its effects, these include the academic and museums sectors, conservation organisations and pressure groups.

Secondly, there is an emerging theoretical agenda (e.g. Cleere 1989; Cooper *et al* 1995; Carman 2002), which seeks to provide an academic context to archaeological management. The academic agenda has also sought to query the work of archaeological curators, administrators and funding bodies, and asks them to consider their roles. The theory is also beginning to underpin decision-making by asking for justification of the need to manage and for whose benefit heritage is managed, and identifying the social context for archaeology in the modern world. It also recognises that although archaeology itself is about the past, the management of that resource is very much set in the present.

The third theme is the development of resource management within the broader discipline of archaeology. It is recognised, and also widely criticised, that much of the training for heritage managers was undertaken in the workplace (e.g. Saunders 1989: 161; Davis 1989: 275). Other commentators have noted that the academic teaching of management has since begun to be developed, and is now targeted at a new generation of resource managers both in the UK and abroad (e.g. Alexander 1989: 280; Darvill 1995b: 171). Since Davis published her critique in 1989, there has

been a proliferation of undergraduate modules and postgraduate qualifications in English universities, which suggests this position has changed. These courses cover many applications of heritage management and wide range of related disciplines. The development of resource management as a subject is critical to produce sustainable gains in the future and maintain the interest in heritage.

The fourth and final theme is reconciling the interests of the natural and historic environments to form a coherent policy. Here the work is very current and new and it is difficult to see how this area will develop in the future. In some respect however this is the most important theme from a wetlands perspective, because preservation, conservation and management all require the alignment of agendas and resources in this area to be able to succeed.

Chapter 4 Wetlands and management: Examining current approaches to valuing and managing wet archaeological sites

4.1 Understanding and analysing the context of current policy and the management of archaeological sites in wetlands

By looking at the current reality of archaeological management for sites in a wetland context the intention is to reach an understanding of how site management has developed in both academic and practical contexts. Some of the forces that act upon archaeological management have been outlined in previous chapters, including legislation, policy development and funding, all help to provide a strategic framework in which the management of sites takes place. Legislation also provides constraints, such as those decisions delivered through the planning system. The picture painted by various baseline surveys, such as the Monuments at Risk Survey (see Darvill and Fulton 1998), has shown that in spite of the framework of legislation and policy, archaeological sites have not fared as well as other parts of the heritage resource, and for those sites which are situated in a wetland or wetland context the picture is either similarly poor or potentially worse. Baseline studies, specifically for the wetland resource such as MAREW (see Van de Noort *et al* 2002), presented a worrying picture of site loss and decay. This work also showed that the causes of site loss are not always the most obvious. For example, peat cutting in England has been perceived as being one of the most destructive forces at work in wetlands. The work of Van de Noort *et al* (*ibid*: 22-3) and others (e.g. Middleton 1999) suggest, however, that more sites are lost through land drainage, peat wastage, and the conversion of wetland, wetland margins and former wetlands to arable cultivation, than are destroyed through peat cutting. Understanding the conservation management of wetland sites is evidently a complex issue, and it is important to understand the histories of individual archaeological sites over the past 30 - 50 years, and to consider the natural and anthropogenic forces acting upon them. In particular, it is a key concern to understand why, in spite of safeguards, legislature and policies; wetland sites have been lost and will continue to be lost.

Later chapters will attempt to address some of these issues by using selected case studies. These studies will look in depth at the management

history of a number of sites in an attempt to understand and analyse how wetland sites have been treated. Particular attention will be paid to the management techniques utilised, and how these have been funded. The case study sites, some with a long history of study and some actively managed, will be used specifically to allow an in-depth look at issues surrounding previous management practices, and archaeological and land use history. It is hoped to show how the value of research at sites such as Sutton Common can help to inform conservation management agendas and conservation strategies. The case studies will be reviewed and analysed against a series of active management practices. These practices have different theoretical bases, and use different mechanisms for both valuing assets, and understanding and calculating their worth. These mechanisms, such as Research Frameworks or cultural value, are in current usage in England, but have not been developed specifically for archaeological sites in wetland contexts. It is hoped that by reviewing the case study sites through the lens of different management mechanisms, it will possible to show just how valuable these sites are.

One of the key reasons for considering the difficult and complex issue of value is to attempt to find an effective mechanism that can be applied to well known and newly discovered wetland sites. This chapter will therefore review these management mechanisms. Section 4.2 considers the use of research to create frameworks and management plans. Section 4.3 reviews the types and scales of current usage from research frameworks down to the individual site level. Section 4.4 examines attempts at providing measurability of archaeological sites through classification, grouping and the scoring of individual sites, and will continue to explore value, and those issues that surround the ‘value debate’ (see Carman 2002: 148). Section 4.5 extends this debate and considers how to establish ‘cultural value’. It is important not just to look at these approaches, but also to evaluate how they underpin current ideas, and how this reflects on and relates specifically to wetlands and cultural aspects of wetlands. Finally, Section 4.6 considers aspects of the costs involved in the management of sites.

4.2 Research frameworks, agendas, strategies and management plans.

A reflective management approach is widely favoured in archaeology, particularly for the management of archaeological projects but also in developing systems for the wider historic resource, such as those described in this section. This brings together two recognised strands of learning theory: firstly the learning cycle which is presented here after Kolb (1984), and secondly evidence-based practice which is described from Schön (1983).

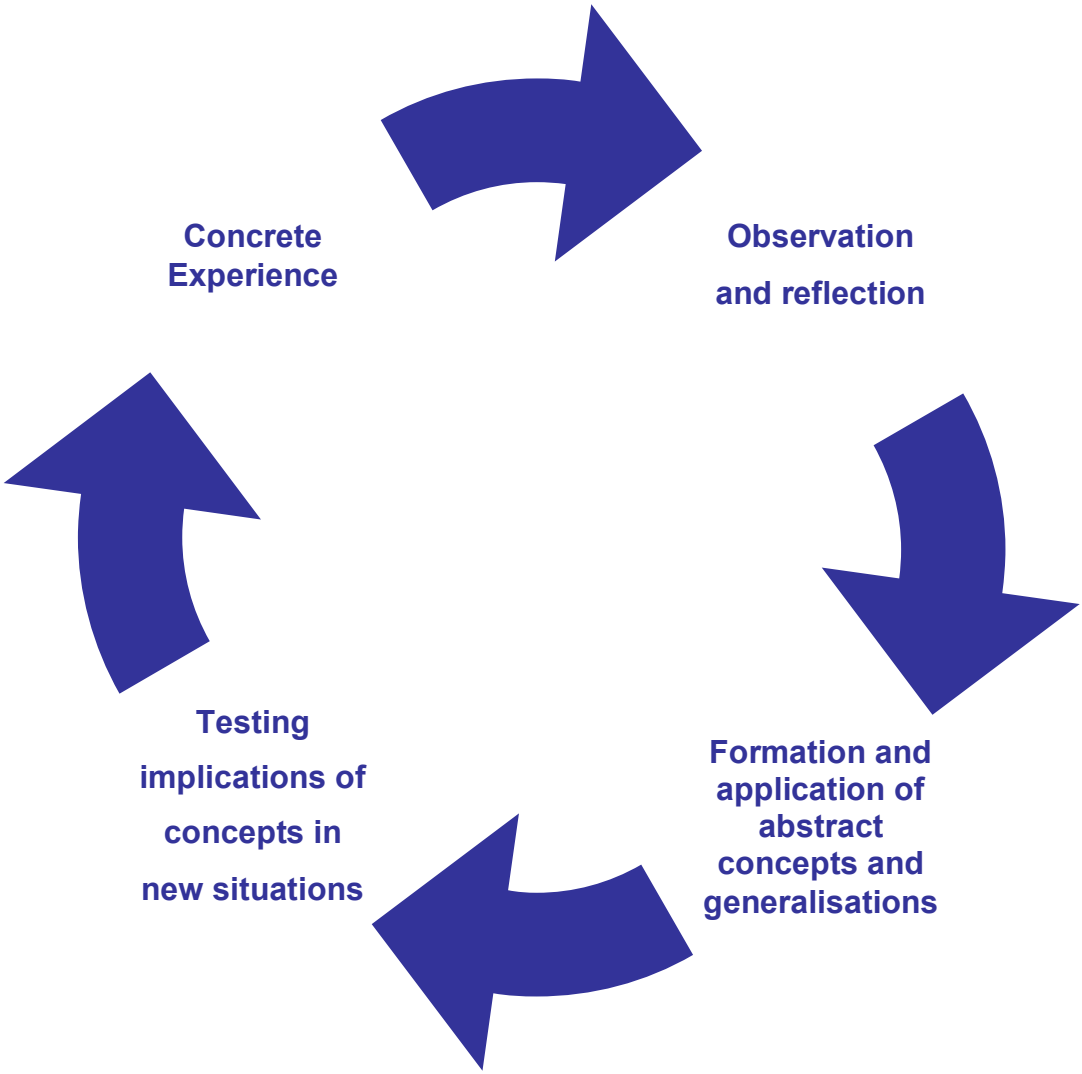

Figure 4.1 The learning circle (after Kolb 1984: 21)

In a management context the learning cycle is important because it is understood as, and has evolved into, an iterative process. This process is understood as one which leads from observation and reflection on past practices to future reflection and the application of knowledge to develop policy and practices. Implementation, evaluation, and review are also inherent in this cycle (see Figure 4.1 above). Through this route the learning is described as the process '…whereby knowledge is created through the transformation of experience' (Kolb 1984: 38), and it emphasises change through adaption.

A second strand which has had a major impact on the archaeological profession is research-based practice. This is particularly important in archaeology which is heavily dependent on evidence and research, particularly surveys and excavations which provide the knowledge base for the subject. This approach is underpinned by the premise that decision making should be based on sound evidence derived from rigorous research. Its main strength is that it introduces rational planning to any process such as the allocation of resources. Decisions are thereby based on a careful appraisal of what is required and not on intuition or outmoded practice. Although this assumes that the 'evidence' is unproblematic and unchanging, many commentators argue that 'good' research is unlikely to be questioned as long as it can be demonstrated that it has been produced according to a scientific discourse (e.g. Taylor and White 2000). The technical nature of the process allows problems with the research to be explained methodologically, for example as an incomplete data base, rather than a question of the problem with processes of data collection or the nature of scientific knowledge. This is known as 'technical rationality' (see Schön 1983).

An alternative approach to technical rationality was proposed by Schön who defines a process of reflective practice which looks much more closely at the issues and detail of day-to-day practice, an approach known as 'reflection-in-action' (Schön 1983:128; see also below Figure 4.2). It enables the practitioner to deal with a much greater level of uncertainty or uniqueness. When a situation is outside existing categories of knowledge, and is perhaps more unusual or problematic, then a practitioner can

construct a new way of addressing the problem: It provides a critical dimension to the framework process processes developed in this section and also has been adopted by the processes described in later sections (see 4.4.5 and 4.4.6).

Reflection in action

- Thinking ahead
- Analysing
- Experiencing
- Critically responding

Reflection on Action

- Thinking through subsequent to the situation
- Discussing
- Reflective journal

Figure 4.2 Principles of reflection in action verses reflection on action (after Schön 1983)

In archaeology and heritage resource management, the reflective approach has been used in the development of management plans, and the now commonplace research framework and strategy documents. This approach is routinely applied to individual sites, groups of sites, or types of resource, as well as regional or sub-national datasets. What goes into a management plan is an assessment of past activity, the application of current policy, agendas and theory, combined in an aspirational way to create research and management frameworks. These are likewise combined in an overarching document or universal framework to create a new and balanced way forward (See Figure 4.3).

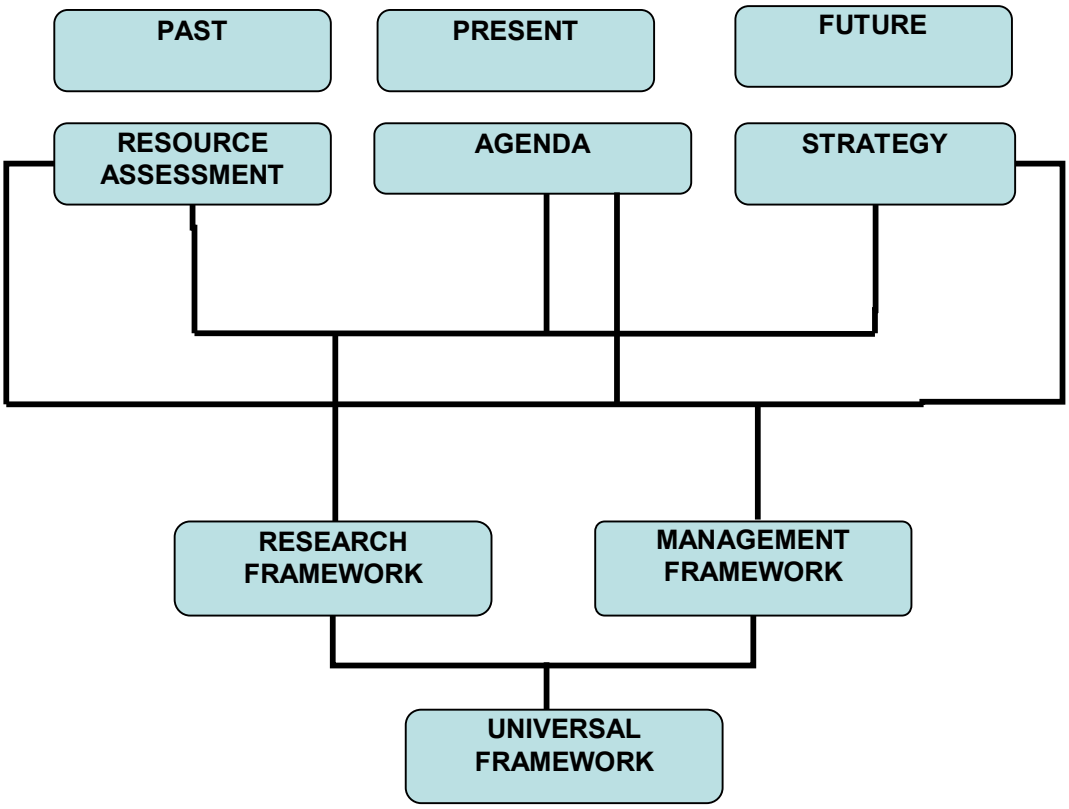

Figure 4.3 Structure and components of a reflective management strategy (after Olivier 1996: 6)

The subject was not broached again until after the Second World War when the Council for British Archaeology published a thorough analysis of current fieldwork and research practices, in order to identify good and bad techniques and a common approach to fieldwork in particular (see Hawkes and Piggott 1948). This approach was not widely recognised until the 1980s and the early part of the 1990s, when a proliferation of 'framework' type publications began to emerge. These provided analyses of, and priorities for, a range of issues. These were sometimes focused on national approaches; others were designed to raise the profile of a particular archaeological period, or particular topic or sub-discipline of archaeology (e.g. Thomas 1983; Prehistoric Society 1981; 1984; Mellars 1987; Prehistoric Ceramics Research Group 1991). A comprehensive listing of these documents was provided by English Heritage in 1996 (Olivier: 60-79).

After its formation in the early 1980s, English Heritage embraced the remit of overseeing the development and organisation of a formal approach to creating framework documents. One of the objectives in this was to create an environment where national and regional approaches to framework development were enabled, and this included providing financial support. This meant that English Heritage needed to establish criteria by which financial support could be prioritised and distributed, and this was achieved with the publication of documents such as '*Exploring our past: strategies for the archaeology of England'* (English Heritage 1991). The establishment of PPG 16 in the early 1990s heralded, arguably, one of the most significant changes to the structure of archaeology in Britain (see Chapter 3). In management terms, it had the immediate effect of establishing developer-funded archaeology and this freed English Heritage's budgets from funding rescue excavations, and allowing the focus to return to other types of threat (Thomas 1993: 148). At the same time, significant concerns were raised locally and nationally that there was a lack of academic rigour and research focus within PPG16 funded work (see Morris 1993; Bishop 1994; Biddle 1994; Wade 1994). This led to the publication of English Heritage's *Frameworks for our Past*, which set out a theoretical process and structured methodology for standardising the management of the archaeological resource in England (see Olivier 1996). This work reviewed the past history of guidance and strategies in archaeology alongside an analysis of English Heritage funded projects and research patterns since the introduction of PPG 16 (*ibid*: 2). It also championed the use of a more reflective management style and its application to the development of new management plans. This publication has led to the development over the last ten years of a proliferation of research frameworks, agendas and strategies, particularly at a regional or sub-regional level (e.g. Williams and Brown 1999). The first attempts at regional guidance to be produced using this English Heritage method (see Figure 4.4) have now been in operation for up to ten years (e.g. Glazebrook 1997; Brown and Glazebrook 2000). They are now coming up for evaluation, review and revision.

Other agencies and bodies involved in the conservation management of the archaeological resource have likewise produced a range of documents

and policies using a similar model to that developed by English Heritage (see Figure 4.1 above). The National Trust, for example, has developed an in-house programme of conservation plans for sites in their care (Thackray 1999: 19-26). There are also management plans for inter-regional assets such as the World Heritage sites of Stonehenge (www.apollo5.bournemouth.ac.uk/-stonehenge/) and Avebury (www.kennet.gov.uk/environment/avebury-world-heritage-site/avebury-archaeological-research-agenda). New and updated agendas for subsets of archaeology have also been developed (e.g. Trow and Roberts 2002). Outside the UK, similar approaches to conservation management of the archaeological resource are now being used, in places such as the Boyne Valley in Ireland (e.g. Smyth 2008: 30). Further developments, such as recent collaborative high level documents have been produced, which are specifically designed to co-ordinate research and pool knowledge (e.g. UKHERG 2005). These have been developed with the aim of improving the way in which stakeholders can build and develop suitable policies.

Terminology (see Fig 4.2, 4.3 and 4.4)

The definitions used here follow the English Heritage protocols (see Olivier 1996). These are also favoured by the Association of Local Government Archaeological Officers (www.algao.org.uk).

- A **research framework** is the overarching document. It should be a dynamic document that changes and develops with time. It should be developed in accordance with, and include a common comparable method of assessment and an objective understanding of gaps in knowledge. It should also be frequently reviewed and updated as new material becomes available.
- A **resource assessment** is representative of the current understanding and state of knowledge and provides an overview of that knowledge. This essentially reflects past actions and activity.
- A **research agenda** is the recognition of potential, and provides an understanding of the disparities in knowledge. It should also

include a list of equally weighted research topics, and establish what potential the resource has to answer the questions posed. The agenda is set by placing current policy objectives against the gaps in knowledge, to establish the priorities. This essentially reflects the present and is immediate. A **research agenda** can be seen as a list of **objectives** of equal merit and status

- A **research strategy** is a statement setting out the priorities for future work, and should include a subjective assessment of value or significance of those priorities. This can be divided into several separate selections, one which indentifies the **research priorities**, and another which establishes a **research programme**. The latter is objective led, and defines a programme or list of projects. An often stated aim is to persuade the funding body to carry out a programme of work or to fund the work, based on an objective assessment of need, and to ensure that resources are targeted towards the areas of greatest need. A research strategy is aspirational, but should be seen as flexible over time.

Issues

With the publication of the 1996 report *Frameworks for our Past*, English Heritage set out to address a number of concerns (see Olivier 1996: 40-53). In particular, 'the opinion has frequently been expressed that a research framework may be of less value than the processes leading to its production' (Olivier 1996: 40). There was also concern about gaining a consensus among the archaeological community as to the form and function of a research framework, and that the considerable problems of fragmentation within the profession would have to be reconciled before the development of a shared aim and transferable methodology could succeed.

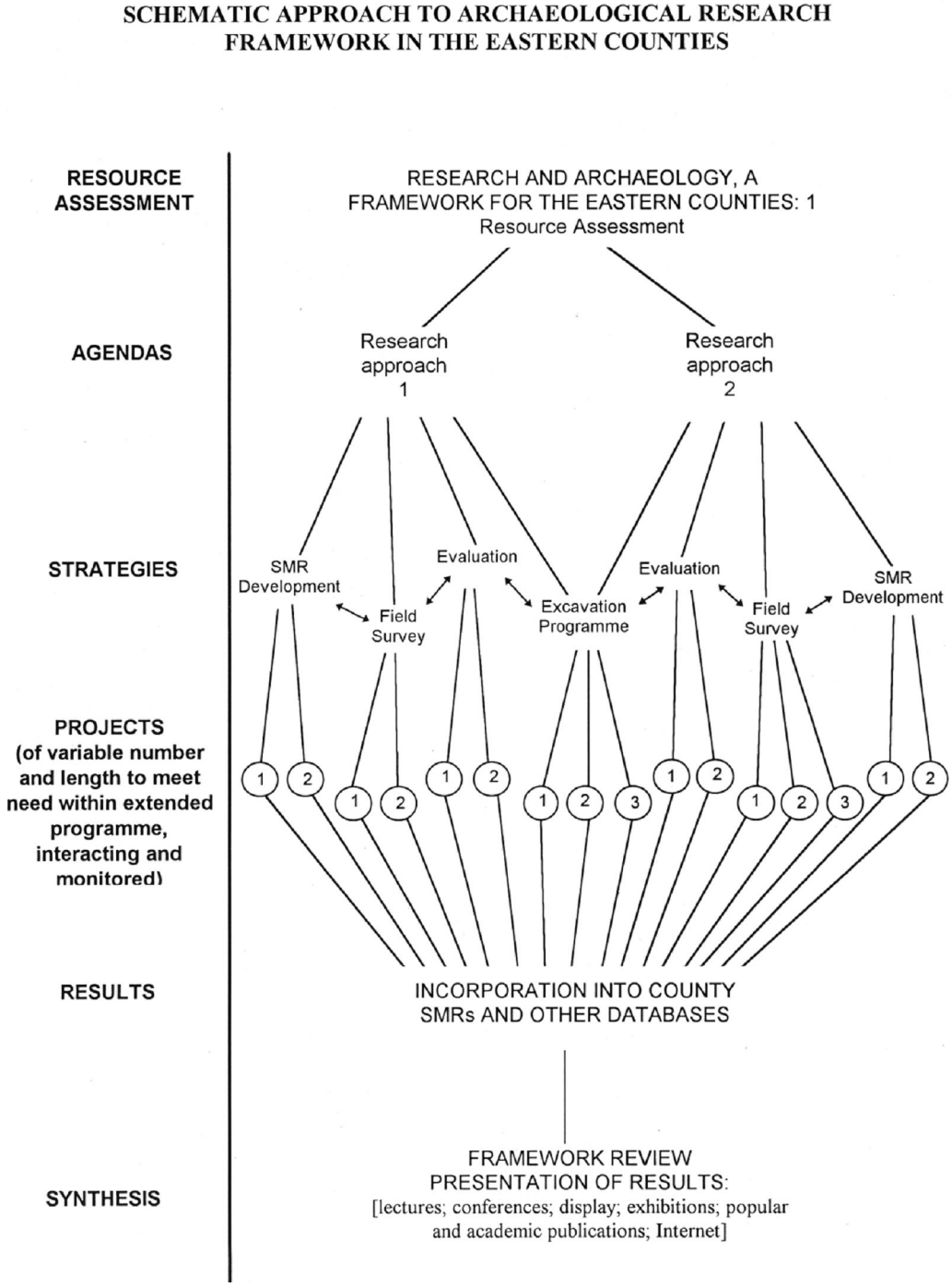

Figure 4.4 A schematic approach to archaeological research framework in the eastern counties, (from Glazebrook 1997)

In management terms, however, both the process of resource assessment and the development of frameworks and agendas have been seen as being of considerable value, particularly to regional curators,

development control officers and to the funding bodies. For example, in the East of England region where at the present time the research framework is under review (Medleycott *et al* In Prep), the debate has primarily focused on maintaining the importance and relevance of the current document, as opposed to a need to rework the format or change the underlying structure of the research framework itself. The main issue is that this form of management plan remains static once it has been published, and it is in effect representing a point-in-time statement that is quickly out of date after completion unless evaluation and reassessment are built in to the process.

The review process for the framework in the eastern counties has seen a significant debate between the practitioners and curators in the region as to the best way to keep a document current and 'alive' (Regional Research Frameworks Meeting, Cambridge 09th July 2008). The need for curatorial officers to have a published document in 'hard copy' format to refer to, and which sets the standards and upholds the research, needs to be balanced against finite resources, the rapidly changing nature of research and newly developing priorities. This debate has not yet been resolved, but options that are being considered are focussing on the potential of internet publishing and the format of that type of publication. It is, however, clear that a more flexible approach is required. As information becomes available and new research is undertaken, the only way to keep the frameworks 'fresh' is to regularly update and evaluate them, and therefore documents would be kept 'live'. Intellectual ownership and the cost of constantly updating the document are fundamental issues, but this remains an aspiration for this type of document.

The need for the kind of document that can be used to set standards and guide the PPG16/PPS5 process remains, and research frameworks thus continue to fulfil the role originally envisaged by English Heritage, and others (e.g. Morris 1993). Developers and archaeological consultants have also suggested that a publicly accessible version should be developed that will allow developers to see how the work that they are funding fits into the wider scheme of archaeological research priorities, thereby encouraging and fostering a better research culture within the PPG16 scenario. They argue that developers are more likely to agree to fund research that is outside the

scope of their PPG16 commitment if they are more conversant with the issues (Heathcote *pers. comm*.).

The development of the research frameworks was designed to help establish a culture of research and bind the discipline to a common purpose. The divide between theory and practice is to some extent unresolved, and a partition within the community of practitioners along similar lines is also widely recognised. The research frameworks could therefore be considered not to have fully achieved a consensus in this area. It is, however, not difficult to see that management would be poorer should frameworks not exist, nevertheless the deep-seated problems of practice that remain engrained within the archaeological community are deeper than can be solved solely by the use and development of strategies and frameworks. An approach which is of more use to practitioners and is less technologically rational may be required

Research Frameworks for Wetlands

In spite of the proliferation of frameworks, no formalised attempt has yet been made to create a research framework specifically for wetland archaeology. The Monuments at Risk in England's Wetlands project provided a baseline survey, but the aims and objectives followed more closely its precursor, the Monuments at Risk Survey (see Van de Noort *et al* 2002; Darvill and Fulton 1998). It did not attempt to deliver a research framework. It provided a more critical agenda than just resource assessment, and was also striving to stimulate debate and raise awareness in the profession about the lack of co-ordinated research in wetland archaeology. The loss of wetlands, and therefore the loss of wetland archaeology, was something that had perhaps not been fully considered by the previous generation of archaeologists who had instead concentrated on methodologies, survey, discovery and quantification. Furthermore, it was recognised that the successful management of wetland sites required more in-depth and targeted research.

From this report came the English Heritage 'Strategy for Wetlands' (Olivier and Van de Noort 2002). This is discussed in more detail below, but it amounted to a high-level commitment to support research, education and

collaboration with other agencies in wetland areas. In comparison to other strategies, it provided more of a general overview of commitments than the targeted and themed strategies used by the regional research frameworks (e.g. Glazebrook 1997). It did, however, provide direct outcomes and was followed by the development and creation of a wetlands GIS programme, which provided regional stakeholders, county based curators, and heritage managers with a map of England's wetlands linked to information on the known archaeological and palaeoenvironmental resource, its potential and hypothetical mitigation scenarios. The second outcome from the strategy was the Heritage Management of England's Wetlands (HMEW) project (Van de Noort 2002). This project produced a list of wetland sites, monuments, landscapes and resources in England and used a similar reflective model to that suggested by English Heritage for the creation of Research Frameworks. The project went on to develop a series of management plans for those sites on the list that were considered to be of national importance. The layout developed during the HMEW for the creation of management plans is also replicated here in the case studies (see Chapters 6, 7 and 8). The case studies used in the thesis have also been drawn from the HMEW list, with the exception of Beccles, a new nationally important site, discovered since that project was completed.

On a regional level other similar projects were developed out of the English Heritage Strategy for Wetlands remit. Monuments at Risk in Somerset's Peatlands project (MARISP), for example, which has recently been concluded (www.somerset.gov.uk/somerset/cultureheritage/heritage/projects/marisp/; Brunning 2008), looked in detail at the state of preservation of waterlogged sites in the moors and levels of Somerset.

More recently, collaboration between a group of government agencies and non governmental organisations, including Natural England, the RSPB and English Heritage, has produced a 'Wetland Vision' (www.wetlandvision.org.uk). The aim was to establish a 50-year vision for England's freshwater wetlands, and to show where wetlands could be restored and new ones created. The project promoted the wise use and good management or wetlands, with the hope that by providing funding and encouragement in this way it would help towards conservation of the natural

and historic environments and ameliorate the effects of climate change. What was developed was in effect a multi-agency 'road map' style project which described the location, nature and extent of the wetland landscape and the potential for the future development and restorations.

What is valuable in the context of research frameworks is that this project moves the debate forward, in particular for wetlands and the cultural heritage of wetlands. The vision is multi-agency owned, multi-tiered, web accessible and underpinned by well researched data. This translates into an unparalleled map resource, which is not only accessible but has been created in a GIS format. The vision therefore provides a platform for future wetland development; it is underpinned by good data and can be targeted towards the sites where the most benefits can be gained. Like the English Heritage Strategy, it is aspirational and agenda forming, although in reality the delivery of the results has the potential to be more controversial and difficult.

English Heritage Strategy for Wetlands

The strategy for wetlands points to a commitment from English Heritage to support research into wetland sites, their management, and long-term survival. It was also designed to encourage individual or institutional research into wetland topics. This strategy for the heritage management of wetlands is based on four main principles,

- Developing better management strategies,
- Promoting new research
- Promoting new outreach and education programmes,
- Developing new policies to improve the management of the sites.

This was underpinned by a series of commitments, for example under management strategies, the report committed English Heritage to the development of '…site-specific conservation management strategies for the most important wetland monuments at risk, and co-operate in the development of wetland landscape conservation management strategies with other relevant agencies' (Olivier and van de Noort 2002). Likewise under the

'policy' heading, English Heritage was looking to develop '…policies in partnership with other organisations… to address wetland cultural heritage issues that fall outside the planning process' (*ibid*). This was to be implemented through actions, such as to '…produce an inventory of the most important wetland monuments in England, and design and implement, where possible, site-specific conservation management strategies' (*ibid*). It was from this that projects such as HWEW were developed, but also (and perhaps less directly) developed the political climate that allowed projects such as the analysis, excavation and management of Sutton Common to take place.

Issues

One of the underlying tensions is the gap that lies between the static nature of the published frameworks and the dynamic nature of the situations involved. This is identified from the outcome of projects like HMEW, and echoes criticisms of the research frameworks. Essentially it is the concept of keeping the approach 'live' and current. The long time scales needed and envisaged by the process of strategy development, creation and review are potentially too extended to preserve endangered and critical deposits. Here, the problem of sustainability in wetlands is likely to be more critical to management successes than in other forms of archaeology. The development of management plans and a framework for wetlands, therefore, requires a different type of research that includes more detailed landscape-focused information, and the wider integration and co-operation of other disciplines and stakeholders. For fragile waterlogged deposits and for sites in an unfavourable state of preservation, the framework process can almost never be the answer. The Strategy as published by English Heritage, like other frameworks, is also out of date and in need of revision. A number of the goals have been achieved, such as the Wetland GIS and HMEW, but also new priorities have emerged to take their place. In particular, the work at sites like Sutton Common has identified a process to monitor the burial environment at wetland sites, challenging previously held views on the long term sustainability of archaeological sites in wetland and the value and integrity of preservation *in situ* for these sites.

That frameworks could be used to attract funding is an interesting idea, which could be very useful in a wetland context. Being able to target the resources that are available towards the most important areas of research is something that could be beneficial. To set such priorities would, however, need either a specific wetland research agenda, or a research assessment and overview stronger in wetland themes than currently exists, and this would require a great deal of consensus and co-operation from the current leading stakeholders.

4.3 Scoring and value, the Monuments Protection Programme approach

English Heritage's definitions of sites of national importance are guided by criteria laid down by the Secretary of State for Culture, Media and Sport (www.english-heritage.org.uk/server/show/nav.1369). These are;

- Extent of survival
- Current condition
- Rarity
- Representivity, either through diversity or because of one important attribute
- Importance of the period to which the monument dates
- Fragility
- Connection to other monuments, or group value
- Potential to contribute to our information, understanding and appreciation
- Extent of documentation enhancing the monument's significance

These criteria have been developed to allow the process of scheduling and monument management to retain a place in legal statutes and to have a continued relevance. It was partly in response to this that the Monuments Protection Programme was developed and established by the newly formed English Heritage in 1986. After the publication of the 1979 Ancient Monuments and Archaeological Areas Act, and its update through the 1983

National Heritage Act, the Schedule remained a central part of the legislation. It was, however, clear to professionals and academics alike that it was, '…totally inadequate and unrepresentative as a sample of known archaeological sites and monuments…' (Darvill *et al* 1987*:* 394). At that time it held approximately 12,800, monuments which constituted only an estimated 2% of the total known resource (e.g. Wainwright 1984 and Darvill *et al* 1987). An imbalance in the schedule was also recognised; and biases were apparent as a true reflection of the overall resource, but also by county and period.

The key objectives of the Monuments Protection Programme were essentially to review and evaluate existing data, both on and off the schedule and to provide a rationale to underpin its continued advocacy (e.g. Schofield 2000; Darvill *et al* 1987). It was important to reduce the inaccuracies and biases that existed, but on a fundamental level information also needed to be collated on the condition and survival of monuments to establish the levels of resources required to deal with current and future issues, and also to develop priorities for future management.

Criteria for Stage 1, Characterisation	**Criteria for Stage 2, Discrimination**	**Criteria for Stage 3, Assessment**
- Period (currency) - Rarity - Diversity - Period (representativity)	- Survival - Group Value (association) - Potential - Documentation - Group Value (clustering) - Diversity - Amenity Value	- Condition - Fragility - Vulnerability - Conservation Value

Table 4.1 Showing the stages and criteria of monument evaluation (after Darvill et al 1987: 396)

The main tool utilised for this purpose was a comprehensive assessment of data already held in the county-based Sites and Monuments Records, which included both scheduled and unscheduled sites. This assessment was to be undertaken on a county by county basis and by a predetermined list of monument types provided by the Monuments Protection Programme. This produced a three-part characterisation and assessment

programme (see Table 4.1), which had been designed to apply to all individual or 'single' monuments, but also relict landscapes and urban deposits (Darvill *et al*: *3*99 – 400). It also included the development of new standardised forms and systems of classification for monuments. This included new SMR Manuals (see Darvill 1988 a; b; 1991; 1992; English Heritage 1993) and standardised Monument Class Descriptions (see www.eng-h.gov.uk/MPP/mcd/index.htm). Sites were then scored according to the assessment criteria (See Table 4.1 above) and those with high scores would be considered for new scheduling or would remain on the schedule.

The work of the Monuments Protection Programme and associated projects had a number of strengths. One of the main benefits of the Monuments Protection Programme survey style was that, although the criteria were to some extent subjective, the process used professional judgment and consistence to level out this bias. It thereby provided a framework by which monuments of very different styles, forms and functions could be compared for their value. As part of this, it redefined the various names and terms by which similar monuments had come to be known around the country, and produced a list of standardised site types. Although this was never fully completed, this initial work has lead to a thesaurus of archaeological terms which is now used by the majority of HERs, by English Heritage's National Monuments Record, and others including Natural England's Stewardship programme through their GIS system *Genesis.*

The Monuments Protection Programme also created an internal 'value' mechanism within archaeology as a whole, through which the management of monuments was updated, properly regulated and made externally transparent. This was a step forward in heritage management. Being able to judge one monument against another, single or grouped, prehistoric or industrial, landscape or urban, is of critical importance in keeping the schedule current and up to date. It is also crucial in the decision making process for designation in particular to be undertaken in a transparent manner, to allow those outside of the profession to have confidence in the system.

The Monuments Protection Programme also had a number of weaknesses. Aside from the issues already identified in the original aims and

objectives such as the need to deal with diversity and regional variation, the overwhelming problem for the Monuments Protection Programme was the sheer volume of data stored and held on databases. Although the project was designed to cope with diversity, it was the sheer numbers of sites involved that proved to be the main pitfall, and by 2000 , after 13 years work, only 11 areas or counties had completed projects, with another four in progress (Schofield 2000: 13). Even in those areas with so-called 'completed' projects, it was recognised locally that the work had not been finished, and there were certain monument types that had not been fully surveyed by the time the money was withdrawn. This essentially shows the issues inherent in data capture of this type, in particular the nature of the resource is always changing as archaeological research develops, and capturing dynamics the situation was not likely to be possible

The work undertaken in Suffolk is a good example. It was noted as having been completed (*ibid*). Information within the HER however shows that a full revision of all the scheduled sites in the county had not been undertaken, even though a huge amount of assessment had been carried out (Pendleton *Pers Comm.*). In addition, many types of monuments had not been explored at all, particularly those which were regionally specific (Carr *Pers Comm*.). One of the most striking failures in Suffolk was with moated sites. These are one of the most ubiquitous monuments in Suffolk, with thousands of known examples and references on the Historic Environment Record (e.g. Martin 1988: 60). This monument class also forms the largest proportion of Scheduled Monuments by type in the county. There is no doubt that within the vast variety in the scale, complexity, size, age and preservation of the moated site monument, there are some nationally important sites that are or should be included in the Schedule. During The Monuments Protection Programme work a large number of these sites were re-assessed, some scheduled moats were revised to include wider elements, some sites were de-listed, and others were added, but actually only between one-half and two-thirds of the sites were properly surveyed and assessed. This meant that many sites retain today their old scheduling number and area, and their importance and status remain un-assessed.

Another criticism is that Monuments Protection Programme remains essentially an archaeological tool, and it does only work for the comparison of one monument against another. It is very difficult to take this scoring out of the archaeological sphere and place it alongside other conservation or landscape designations. It is important to be able to do this, particularly for multi-objective management schemes such as Natural England's Environmental Stewardship schemes, known as the Entry or Higher Level Schemes. ELS and HLS work on a farm by farm basis, and are competitive. Points are accumulated by the farmer for having to manage important environmental features, or being prepared to do this. Under the points system archaeological sites which are scheduled rank the same as designated conservation sites, and the fact they have a designation allows their value to be recognised. Other sites valued by Monuments Protection Programme, and important unscheduled sites do not have the same weight. Whilst moving away from management by designation may have been the vision of the Monuments Protection Programme, and is desirable in theory, it does not work in current practice, particularly within the constructs created to evaluate schemes such as HLS. A system is therefore required by which an archaeological site and a rare habitat can be assessed by the same criteria to determine their worth, even though they are very different in character.
It is however a little unfair to use hindsight to judge the development of Monuments Protection Programme against current needs. The rise of conservation farming and the inclusion of heritage with the remit of Natural England is a relatively new development. That Scheduled Monuments would need to be judged alongside Sites of Special Scientific Interest for the same competitive pot of management money could not have been foreseen at the beginning of the Monuments Protection Programme.

Monuments Protection Programme and wetlands

There are a number of issues with the scheduling of archaeological sites in wetlands and there are problems with establishing their values under the Monuments Protection Programme system. The Monuments Protection Programme requires essential information for a site to be assessed, such as area, extent and scope of the site, and the state of preservation of the *in-situ*

remains. These are fundamentally difficult to determine for wetland sites, particularly where an unknown portion of the remains are still buried. The primary objective of the assessment, which is to establish a site's value or importance, is therefore difficult to achieve. Furthermore, it is clear that according to the importance criteria (see Table 4.1), that well known wetland sites such as the Sweet Track or Harter's Hill in Somerset could and should be classed as being of national importance, in spite of the fact that there were no wetland monument types in the original Monument Class Descriptions. When applying the criteria to archaeological sites in wetland contexts, in particular those for the Stage 3 Assessment (i.e. condition, fragility, and vulnerability and conservation value), there are some revealing issues. These are perhaps amongst the most fragile and vulnerable of any monuments and, arguably, have significance beyond the physicality of the remains. In effect many wetland sites would and should score highly in the Monuments Protection Programme scoring. All too often, however, the very nature of the method of discovery puts these sites at risk. This is particularly so for those sites found during peat cutting in the Somerset peat fields for example or on Thorne and Hatfield moors. Furthermore, Monuments Protection Programme criteria do not cover those aspects of site management which might be in the hands of another agency. A section of the Sweet Track, for example, is preserved beneath the Shapwick Heath nature reserve, also a designated SSSI for which the management of the trackway is not necessarily the primary concern. Nor does the Monuments Protection Programme criteria cover those sites for which the conservation of a single monument is controlled by external landscape scale factors, such as at Flag Fen.

It is the issue of preservation *in situ* that provides the biggest dichotomy for the Monuments Protection Programme with regards to archaeological sites in wetlands, particularly if it is continued to be adopted as the theoretical 'ideal' for the long-term future of the best and most important monuments. Monuments Protection Programme scoring and the designation process may work well for some sites, particularly where the wetland has already become degraded and where the organic component has already decayed. These sites are likely to be relatively stable, and the

little that remains can potentially be preserved *in situ*. However, much of the original information, the organic components and therefore much of the site's value had already been lost in the past. Those sites which are currently the best preserved and have the highest potential value, often dependent upon external factors such as high water tables, are not stable and the longer term future for those sites in the current social context is not assured. The economic and social drivers of change in wetlands, including urban expansion, extraction, and the requirements of modern industry and agriculture, are all at odds with the preservation of wetlands and therefore wetland sites. The Monuments Protection Programme project and its outcomes have been totally ineffectual for this type of site, and do not provide any comfort for managing sites in a wetland context. Preservation *in situ* may not be the best option at all in the long run, however if the theoretical 'ideal' is still for long-term preservation of the best and most important monuments, then this has significant long-term cost implications. Significantly, wide-reaching baseline studies tied to ongoing research and site monitoring programmes is going to be required to ensure that this is possible.

Scoring the sites is still perhaps a useful exercise as it does serve to highlight their importance against other 'dry' monuments within the internal value mechanism. The relatively high scores for a range of different wetland monuments suggests, however, that not enough differentiation is provided when sites are all bunched together at the top end of the importance scale.

4.4 The value debate, alternative worth systems and cultural value

Within the history of the development of archaeological management and heritage legislation, the concept of cultural value and the 'value debate' is a relatively recent phenomenon, although it is clearly recognised that 'concepts of value underpin much of the discourse of heritage' Carman (2002: 148). The debate is ostensibly one of understanding the value of our heritage, both as it has been manifest in the past, and how it is currently being understood. What has driven this subject forward are issues such as 'what sort of value', 'how these values are assessed', 'what is valued', and 'who defines the values', and by what system of measurement. Carman, one of the few academics active in this field, divides the value question into three main

areas of debate: accountability of institutions, (see Chapter 4.4.1 below), the significance and importance of sites, (see Chapter 4.4.3 below), and heritage as a 'corporate saving' in the public realm (see Chapter 4.4.6 below). This is a convenient division, and it reflects to some degree the main management themes presented in this chapter. This division will also be reflected in the case studies, where the debates are represented as different methodologies by which to assess aspects of the sites for value, and for importance.

Accountability of institutions

The main area of this debate relates more to museums and specifically to the value of museum collections, and to museums as economic bodies. The value question here was developed in Australia (e.g. Carnegie and Wolnizer 1996). It comes in the form of a process of making museums provide or establish the market value of their collections on a regular basis, as a form of financial reporting. This has created a debate about whether a museum should be viewed in terms of economic value, or whether museum outputs such as outreach, collections based research and public involvement can be considered as part of a museum's worth (e.g. Carnegie and Wolnizer 1996; Carman *et al* 1999; Carman 2002: 149-155). It is perhaps easier to count the pure market value or replacement value of the collections, and much harder to quantify a museum's ephemeral and social activities, but the narrow constraint of an economic structure based on the value of what is held in the collection does not adequately value a museum in terms of its true output. It is also perhaps inappropriate to view these collections by this narrow view, and the value of these alternative outputs from the museum sector to the economy has subsequently been fully explored (e.g. Johnson and Thomas 1991). New approaches to public financial reportage have since been proposed (e.g. Carnegie and Wolnizer 1996).

Accountability in wetland excavations

At first it appears that a debate that has largely been held within the museum community is not of direct relevance to this wetland study, nevertheless, as Carman warns us '[This approach] …has been applied so

far only to the museum sector although it has the capacity to spread beyond the museum to the heritage more generally, including archaeology' (Carman 2002: 149). It could therefore be argued that there is already some truth in this statement, although this is not necessarily as clear cut as in the case for museums. Some of the analysis that follows here will attempt to outline a position for wetland excavations with this economic approach. Whilst this will be discussed more fully in the case studies (see Chapters 6, 7 and 8), this is partly the approach that has been taken by the project team at Beccles and perhaps in a less calculated way at Sutton Common. At Beccles there has been a deliberate attempt to target funding bodies in order to pursue an agenda which tries to place the fragility of the site and the likelihood of its long-term survival at the heart of the baseline study. In doing so, the proposal recognises that although a management outcome must be sought, long-term preservation may not be assured, and the relative 'value' of this baseline research is then significantly enhanced. This places a nominal cost on the information recovered by record from the site on the understanding that the same information may not be available to future generations. At Sutton Common, a monetary figure can likewise be placed on the management of the site through the cost of land purchase, the cost of the wide ranging research and in the reinstatement of the site. There is also an ongoing management cost, which is currently being met by Natural England, through an environmental stewardship agreement, which has been granted with the intention of maintaining the land as a wetland or semi-wet habitat, and the reinstatement of rough pasture for grazing. Although this type of habitat is important in biodiversity, conservation, landscape and archaeological terms, it is no longer considered viable in the current farming regime, and therefore the farmer is incentivised by the grant to maintain it.

In the case of excavation, research values could be calculated as the sum the grant giving bodies were willing to pay against a series of research objectives. This idea of 'research accounting' is something that will be explored in later chapters and the case studies, particularly Sutton Common and may provide a partial solution to the issue of future site management in the case of wetlands.

Significance and importance of sites

The second area of value debate revolves around the concepts of use and significance (Carman 2002: 155 – 167), and stems from the recognition that although heritage as suggested in PPG16 is 'finite and non renewable' it is not possible to preserve everything, therefore value judgements have to be made as to what can and should be preserved. This has already been partly discussed elsewhere because, for example, the criterion for the selection of assets of importance in international and national arenas underpins the evaluation of sites. These criteria therefore define which sites are deserving of World Heritage status, and also define the divisions in domestic archaeology between what are national, regional or local assets. The theory of the assignation of significance also underpinned and led to the development of the Monuments Protection Programme (Darvill *et al* 1987), as discussed above, for the Monuments Protection Programme sites were assessed on characterisation, discrimination and assessment criteria, in order to define one-on-one value against a nationally agreed standard. This move towards a more structured and theoretically more consistent principle of preservation was an attempt to tackle the regional political and sample biases that had become inherent in monument management through the old legislation and the Scheduled Monument designations. The UK is one of only a handful of nations to have attempted to implement a pre-arranged process and prescriptive methodology for the evaluation of sites. Elsewhere the debate is as much about defining and deciding the criteria as it is about significance (Carman 2002: 156).

Archaeological significance, or at least the measuring of archaeological significance, is essentially an America construct and the early debate has unsurprisingly largely occurred in American literature (e.g. Bruier 1996; Briuer and Mather 1997). Its origin can be attributed to legislation put in place in the 1960s and 70s to protect American sites and, from this, the field of CRM subsequently developed (see Chapter 3.5.2). Here, significance is understood essentially as an equation where the measurement of value will vary depending upon context and time. Archaeological value is therefore relative and dynamic (Carman 2002: 156). Significance criteria for the measurement of archaeological sites, therefore, have an inherent bias that

reflects the time in which they were established, creating a management and policy *Zeitgeist*. This is an inherent problem with something such as the Monuments Protection Programme, where the results, data and findings have largely been sidelined due to the lack of funding to update and computerise the records.

Another embedded issue is that systems for measuring archaeological significance can be too narrowly targeted towards a stand-alone or individual site value, and valuing individual archaeological sites against each other is a process with many pitfalls. This has been countered, particularly by the Monuments Protection Programme, by preferring to focus on representative samples. This, however, required the standardisation of monument descriptions before the process of analysis could be undertaken, and the infinite variation of archaeological sites does not readily 'fit' into these pre-ordained classes. Identifying representative samples to preserve, is likewise a decision making process fraught with difficulties. All attempts to determine sites' significance are underpinned by the need to appraise and assess, for which in the United States the phrase 'significance evaluation' has been coined (see Bruier 1996). Significance evaluation is used to see if a site fits certain criteria and survives with enough important elements to be considered 'good enough' to represent its class. It can also be applied to see if more of the site survives below ground than can be seen from the surface. Significance evaluation is also used to identify and ring-fence 'a stock of undamaged sites for future investigations' (Carman 2002: 159). This principle is also found in the UK as an idea which underpins the premise of 'preservation *in situ*'. As suggested above it also underlies the Monuments Protection Programme, and is also one of the key tenets of heritage protection legislation such as PPG16.

Use and Non-Use value

In the context of the significance and importance debate there is some overlap with projects such as the Monuments Protection Programme (see Darvill 1995b: 42-48). This work was published during the Monuments Protection Programme but draws on earlier and contemporary debates (see also Darvill *et al* 1987). In searching for an understanding and recognition of

the various value systems in operation in the UK, Darvill developed the terms 'use and non-use values'. Here the focus of use value is about the 'consumption' of the archaeological resource in the present, in order to affect a 'tangible return' (Darvill 1995b: 41). He cites the use of the archaeological resource through activities such as archaeological and scientific research, as inspiration for creativity, or for education. Moreover, there are symbolic and political uses and also the development of archaeology for recreation, through leisure and tourism and its exploitation for monetary gain, both legitimate and illegitimate. Darvill also says, however, that bringing use to its ultimate conclusion in this context could mean '…uncontrolled exploitation of whatever element of the resource happens to command attention, with the concomitant destruction and loss that is likely to be entailed is one extreme of the gradient along which such values are likely to move' (Darvill 1995b: 41). This could indeed be a warning for wetland archaeologists.

Opposed to use is non-use, which is developed under two headings of option and existence value. Option value emphasises production rather than consumption where 'the goal…is the physical preservation of things in order to achieve the notional preservation of options' (*ibid*: 44). At one end of this value spectrum, words like fossilisation, intact and virginal, are used and, at the other end, is the concept of sacrificing less important sites in favour of preservation of the better ones, a theme which is repeated throughout the significance debate (e.g. Lipe 1984). The emphasis of existence value involves people who in the present may not need to, or are unlikely to want to, use a resource but are made happier because it exists. This borrows heavily from sociology and also from nature conservation, where analogous examples can be drawn (Darvill 1995b: 45). Often quoted examples are the donation from an individual to a charity to save a rare animal, such as a whale or a gorilla, even though that person is unlikely to visit or see the animals in question, but it nevertheless makes him or her happy to know that it exists, or that it is being looked after. The opposite of this is that threats, such as loss of a species or a habitat cause sadness and despondency in the individual. Darvill suggests that the positive and negative feelings are tied to notions of cultural identity and to how we value our personal context.

Carman (2002: 163) suggests that Darvill sees use value as negative and option and existence values as being positive. However, this is not strictly true, and by way of conclusion Darvill suggests that both sides may have an equal weighting and relevance to the current context. Non-use value survives in protectionism, legislation and the state, and far from being positive, can lead potentially towards stagnation, while use value represents people's livelihoods and recognition that there may now be a better use of space than in the past. Different value systems are in operation but it is the emphasis on what is important that changes. This is something that remains a commonality in all of the roles that value systems play in decision making.

Wetland sites and significance, importance, use and non use values

As discussed above in the context of wetland sites and the Monuments Protection Programme work, it is perhaps not enough to simply recognise importance and establish a rank for these sites. The significance of one particular type of site against other types of archaeological sites may be an important exercise in an academic sense to establish relative value or establish a competition. However, the often rare and unusual nature of wetland sites and the enhanced research and academic value presented by the preservation conditions at these sites, mean that even wetland sites with moderate preservation qualities are likely to score very highly against non-wetland sites. Wetland sites also have been attributed high importance by the Monuments Protection Programme criteria and under Darvill's later (1995) analysis; they would also have a high use value. Recognition and comprehension of the high significance of these sites is therefore only part of the issue; it is how archaeologists move from this theoretical recognition of value to the actual reality of site management that counts the most. Unless this recognition is followed up by policy and physical changes to actually improve conservation management on the ground, it does not matter how important a site is if it's long-term preservation *in situ* is likely to be challenging or unobtainable.

One of the criticisms about the application of significance values is that it has only been applied to stand-alone sites. However, whether significance is applied individually or to a representative sample of sites, it is

still not really of relevance to wetlands sites. The same is the case whether it can be established if a site has a use or non-use value. The nature of the wetland resource means that sites are often isolated, or the context of a site performs a function in its preservation, notably its burial environment. In the case of bogs or mires, with important cultural information locked up in the peat sequences, the context of the whole mire systems can also be the thing of significance. It is the nature of the fragility of the wetland resource and the need for certain environmental conditions to be present that creates the significance and enhances the value of a wetland site over a dry site. It is true that wetland sites, like other archaeological sites are finite and non-renewable. However, if wetland sites are always valued as being nationally important or towards the unusual end of the spectrum, but are at a higher than average risk of destruction, then significance is a transitory concept. As the burial environment changes and a site start to dry out or erode, the preservation will deteriorate, and so will the site's significance. If it is the close relationship between the wetland environment and the preservation conditions that intrinsically link and underpin the significance of wetland sites, the degeneration of this environment will also affect a decline in value.

As the pace of scientific discovery in the last 30 years has grown and is likely to accelerate in coming years, ideas that a group of wetland sites could, through identification of their significance, be preserved as a cache for future archaeologists is also theoretically appealing, and a site that could be representative of its type and could be preserved as the best of its kind is also an attractive proposition. The identification of sites which fit this category may not, in itself, be difficult. Neither would it be difficult to evaluate the evidence for those sites against the criteria to determine value. Segregating and preserving sites for the future is the main issue here. The process involves a much more complex situation than for non-wetland sites, one which stands or falls by the right environmental and physical context. It is not, for example, as simple as taking the site out of cultivation, or cutting down the scrub and removing the burrowing animals, because the variables involved in the preservation of wetland sites *in situ* are considerably more complex. As with all monuments, achieving an element of sustainability is the key to success, and it is the same with wetland sites. However, achieving this

in a wetland environment is likely to require a considerable input of resources, co-operation and research, combined within a political framework which recognises notions of cultural value in wetlands as being important and worth pursuing. Because more resources are needed for wetland sites than for other sites, society has to value this resource enough to want to protect it; only then is there enough reason to do so. The paradox at the heart of assigning significance value is, therefore, that the academic process used to establish whether a site is important, cannot recognise that it may be too difficult, too expensive, or physically impossible to achieve long-term preservation, and in particular that the political and social motivation to achieve this preservation may not exist.

In contrast to use and non-use values, existence value may yet have a resonance with wetland landscapes. Public sympathy to the loss of individual archaeological sites may be difficult to count on; however the loss of something more iconic such as a whole landscape like the Pennines or an estuary would surely cause similar feelings of sadness and despondence in people if they thought these areas were threatened. More famous wetland sites, in particular Flag Fen, but also to a lesser degree Sutton Common have also benefited from public support, when it has been understood that these sites may be lost altogether. The Flag Fen Trust for example, with a small visitors centre, museum and study facility now occupies part of the land above the Bronze Age site, which has been paid for by grants, individual subscriptions, and visitors entrance fees. The work at Sutton Common likewise benefited from strong support, in a smaller and more localised kind of way, when it became clear that the project included some degree of re-wilding and access to the site, allied with archaeological and conservation safeguards all of which would help to benefit the local community.

Heritage as a 'corporate saving' in the public realm

If significance is not the answer for wetland sites, then a more far-reaching principle of value may need to be used. The process of assigning or developing an understanding of social and economic value may be of help. The heading for this section, which is again taken from Carman's work, is to some extent misleading as what emerges from it is a discourse on different

appreciations of heritage. This is separate from individual objects and peoples' ownership of 'things', but looks towards an understanding where heritage is more about public ownership, which in some respect is shared, or owned by us all whether we are intrinsically interested or not. In this case a broader concept of heritage and culture is important, particularly one where the principle can be applied, '[that there is] no such thing as private 'archaeology'' (McGimsey 1972: *5*)

This, then, becomes the starting principle for the development of a new understanding of value, separate from the significance debate (e.g. Carman 2002). This theory, developed from anthropology and sociology is leading the current trend towards the ultimate 'corporate' view of worth and is more widely known by the phrase 'cultural value'.

4.5 Exploring cultural value

As a key theme of this thesis is exploring different types and ways of approaching the conservation management of archaeological sites in wetlands, it is important to look at a number of different influences and to see how they can help improve the management of waterlogged sites. Understanding and exploring alternative ways of valuing these sites is a legitimate and potentially useful tool. This section explores ways of defining and calculating cultural value and applying this to the case studies presented in later chapters.

Alternative value systems are very much part of current thinking and the ideas that underpin cultural value are beginning to appear in government rhetoric. These have also found a receptive audience in organisations such as The Heritage Lottery Fund and latterly English Heritage (e.g. Hewison and Holden 2004; Drury and McPherson 2008). Whilst it may be useful to look at alternative ways of establishing the importance of individual sites the aim of this work is not address the wider role of culture within economics, nor offer new insight into the relationship between archaeology and economics, where the definitions of culture are both highly complex and fraught topics in their own right (Throsby 2001: 3). It is, however, hoped that a short introduction to the subject will define the basic notion of cultural value and how it will be

used in this work to express an alternative assessment methodology for the case study sites.

What is cultural value?

The term cultural value within the western European social context is in effect describing an alternative economic approach for scenarios where it is hard to place conventional notions of monetary value. It provides a value system for cultural items, be they objects, or parts of our heritage such as buildings or archaeological monuments, which can not be valued monetarily or for those sites where monetary value is only part of their significance. Understanding or assigning cultural value, therefore, requires the development and provision of alternative scenarios of worth, and it has a complex relationship with the subject in which it is rooted, that of economics.

Leading commentators on the subject such as Throsby make the case that '…economists traditionally distinguish between three forms of capital: physical capital, human capital and natural capital' (Throsby 1999: 3-12). He argues that other types of capital can also now be seen to exist, and include social capital and, of relevance here, cultural capital. Physical and human capitals are standard units of traditional economics, and relate to both real goods and to human contributions that motivate the economy. The idea of natural capital was developed in the field of ecological economics which was looking to include renewable and non-renewable resources, and the processes that control and regulate their output within economic scenarios (e.g. Jansson *et al* 1994). This also deals with the role of natural systems and with concepts of sustainability.

The idea of cultural capital originates from the sociologist Bourdieu (1986), and is now considered as a fourth economic element, and as something that is recognised in both the economic and cultural spheres. In Throsby's terms (1999: 58), this is because 'cultural', in part at least, equates to a dual economic response. On the one hand, the cultural phenomenon has a direct impact on the economy, acting as an economic driver and through wealth creation, but on the other it is something in which it is worth investing time and resources to generate a return. Generated returns are not necessarily always specifically monetary, and the beneficial outcomes of

cultural capital as envisaged by people like Bourdieu and Throsby include academic discourse and cultural goods such as books or art (Bourdieu 1986: 243 and Throsby 2001: 48). They also include a more ephemeral personal development concept, which describes something like an individual's enrichment through culture or a response to a cultural experience.

Accepting that cultural capital is a force which acts upon a country's economy is certainly realistic. Taking the British Museum as an example, it was in 2006 the country's most popular museum: a year which saw an estimated 83% rise in visitor numbers to museums across the sector in Britain since 2001 (Summers 2006). The British Museum's Annual Report for 2006-7 (2008: 5), showed that nearly five million people visited the museum in that year, and it was also one of the most visited attractions in the country in 2007-8, in part thanks to the draw of the terracotta warriors exhibition, which drew 855,000 visitors alone (*Ibid*: 9). In turn, this must translate to a considerable positive economic benefit, both locally within London and for the wider country, and provides, one hopes, an equally positive cultural experience for an increasing number of people. Even archaeology as a profession makes a not insignificant contribution to the economy, and a recent survey demonstrated that significant numbers of archaeologists are employed across a sector which provides jobs, income and employment to the economy, supports museums and museum collections, as well as providing research, literature, educational, leisure and research opportunities through the recovery of archaeological artefacts (Aitchison and Edwards 2008).

The link between cultural capital and cultural value is perhaps more based on value and how value is determined. Throsby (1999), for example, sees an item of cultural capital as, '…an asset embodying cultural value', and that it is these '…questions of value [which] are fundamental to understanding the relationship between economics and culture' (Throsby 2001: 41). An item such as a book, for example, could generate an income and provide a cultural experience. It can therefore work on multiple levels, and provides a number of different types of cultural value. Archaeological sites, landscapes, research and so on are all cultural capital and therefore also imbued with cultural value. Taking cultural value from a theoretical

construct towards a useful evaluative tool for archaeological management requires the development and the practical application of an alternative system of worth projection.

Establishing the value of archaeology in heritage and resource management terms is not new to this debate, and it has been a significant part of discussions within archaeology in Britain since the late 1980s. As has been established above, identifying value and a new value system which takes archaeological sites away from the historical legacy of previous legislation was at the heart of the Monuments Protection Programme (Darvill *et al* 1987; Darvill 1988a; b; and 1992). In the academic sphere, a number of academics have likewise continued to argue for a better understanding of 'archaeological value' (e.g. Darvill 1995; Carver 1996). Other issues, such as the increasingly discordant role of accounting and collection valuation in museums, have also caused concern (see Carman *et al* 1999). In some respects, however, it is exactly these issues that the more recent applications and perhaps more theoretical principles of cultural value have attempted to move away from. The ideas of cultural value that are most current are more embedded in a rounded view of heritage and culture, as opposed to the narrower confines of the applications of value in which archaeologists have been working. To turn this around, exploring cultural value in archaeology can take it away from the confinements of internal debate and place it into the mainstream, by allowing value comparisons across the cultural spectrum to include archaeology and archaeological sites. These ideas are rapidly becoming a part of the international agenda, where the importance of cultural value to economic development has been recognised by international bodies such as the World Bank (Throsby 2001: xiii). Cultural value has also become part of the language of government in the UK (e.g. Morris 2003; Jowell 2004). It is reflected in the publications of policy and strategy groups, and non-governmental bodies such as the Heritage Lottery Fund and English Heritage, in a trickle-down of information on policy from governmental level to practising heritage bodies (e.g. Holden 2004; Hewison and Holden 2004; English Heritage 1997; Drury and McPherson 2008).

Cultural value in the media, 'National Treasures' and 'Restoration'

The concepts of cultural value, as well as becoming part of governmental policy, are also making their way into more mainstream popular thinking. A recent programme 'National Treasures', which was aired on BBC Radio 4 (www.bbc.co.uk/radio4/factual/nationaltreasures_portal.shtml) in the autumn of 2007, provides a very useful introduction to the subject as a whole. This series of programmes brought together both politics and culture in an attempt to use this theme to entertain and induce debate. The premise of the programme was simple: each week two of our nations 'treasures' were pitted against each other to win a hypothetical sum of money. The money was a realistic estimate of the amount that was required to restore, to interpret, or even to purchase that particular treasure. An 'expert' panel drawn from business, public and academic life then weighed up each opposing treasure against a set of pre-determined value criteria, scored it, totted up the score and pronounced that week's winner. Each area of assessment was scored out of 10, with a maximum of 40 points to determine the value of the 'treasure'.

A former government minister would then give an opinion about the decision against the current direction of public or governmental policy. Whilst the programme is interesting in terms of open debate it had a serious underlying academic focus, provided by Robert Hewison as the programme's cultural value 'expert', and it outlined four serious and current issues. Firstly, that each site, thing, object, or landscape had some deserving qualities, which made it worthy of preservation, conservation or curation. Secondly, there is currently not enough resource in the sector to address all needs, making the key underlying issue in heritage management one of choices. Thirdly, that these difficult decisions are more pressing than ever. Lastly, that decision making about worthy causes is a very difficult issue indeed, as there are rarely easy or like-for-like comparisons, and sometimes there are no clear winners in the process. As a summary of the concept, and how it has been interpreted by the BBC, determining cultural value is essentially an evaluation process of cultural resources in such a way as to be able to make the comparison between choices clearer and more measured. Debate is

essential, but decision making should be undertaken only after a range of different positions have been consulted.

This underlying principle is also a theme in another BBC production, this time made for television. ‘Restoration’ (www.bbc.co.uk/history/programmes/restoration) is a programme in which the television-viewing public is presented with a series of regional down-at-heel but historically valuable buildings or structures, and is asked to choose between them. Only one building can be given the reward of a restoration grant from the Heritage Lottery Fund. The public are asked to vote, initially on a regional basis, and then on a nationwide selection in a final round. The diversity can be huge and past programmes have seen choices which range from a stately home to a mill, a church, a non-conformist chapel, and local landmarks such as follies and former public buildings. In this programme, the ‘experts’ provide commentary, with local people acting in some capacity such as trustees, and local charity groups providing advocacy. In Restoration value judgements are made by the public. This provides a subjective measure of value, one which is dependent upon on the socio-economic makeup of the groups who watch and participate in a programme of this nature. Past winners have included a large former public bath house in Manchester, a former school and, in the most recent series, a Victorian workshop. Churches and country houses are seemingly less popular.

The introduction of cultural value attached to the past in the public sphere has been mirrored by its inclusion on the political agenda. Whether it is possible to find a system that produces alternative value decisions to that of monetary value has yet to be really established or tested, and the debate is still relatively new. Establishing a system which enables the extensive variety of the resource to be evaluated professionally in a climate where funding is short must be tempting to decision makers, particularly those driven by political agendas and dogma. Any system that has the potential to be able to answer some of these difficult questions will have considerable attractions for a politician. By scoring everything by the same criteria evens out the diversity of heritage to provide a simple evaluation of worth.

The language of cultural value

Recent reports by Holden (2004) and Hewison and Holden (2004) recognise that there are issues with a new emphasis on cultural value. Holden for example suggests '…it may be argued that in practice the recognition of cultural value merely replicates existing ways of measuring performance' (Holden 2004: 56). They have also demonstrated how hard it is to identify the different voices, citing and identifying the discourse of economics, anthropology, and environmentalism as influences in the construction of the headings now used in cultural value assessment tool kits (Holden 2004: 24-31; Hewison and Holden 2004: 34-43). Holden continues by suggesting that '…reference to cultural values is commonplace in the literature of anthropology and material culture studies, but is rarely applied explicitly in discussions of the cultural context in which we currently exist' (Holden 2004: 56). This provides an opportunity to re-evaluate and re-interpret these value mechanisms in a way which suits the current social and political climate. In the archaeology and heritage sectors, many proponents of heritage management cite influences from these other disciplines, from which they have borrowed particular concepts or phrases, and interpreted them for use in their own arguments (e.g. Lipe 1984; McGimsey 1984; Darvill 1995; Carver 1996; Drury and McPherson 2008; Fairclough 1999: 34).

To provide some structure to the discussion on cultural value in archaeology, it is therefore necessary to look at the language used and in particular where the origins of these phrases are. This is laid out below in Table 4.2. Although the documents are policy reports from DEMOS (Holden 2004) and the Heritage Lottery Fund (Hewison and Holden 2004), they both look at new ways of identifying cultural value by identifying the discourses and developing them into something appropriate for the current political climate. A simplified variation on these themes was also used during the Hidden Treasures programme, again developed by Hewison, in his role as the programme's academic advisor. The definitions provided by Throsby and the English Heritage guidance differ again (e.g. Throsby 2001: 84-85; English Heritage 1997; Drury and McPherson 2008: 28–32). The variations on the themes are presented below, described in alphabetical order. These have all been used in various reports on the assessment of cultural capital. The author and the favoured discourse are also noted (Table 4.3). No single

author appears to agree on the categories by which to judge the value of a heritage item, but each has tried to codify value according to broadly similar categories. Although the definitions and selected criteria vary between groups and authors, most are straightforward and intuitive. Table 4.4, provides further analysis of the various criteria used.

It must however also be recognised that, although not specifically stated by either Holden, or Hewison and Holden, much of the discourse noted below (see Table 4.2 in particular) has its origins in social science. Both economics and anthropology are for example part of social science, as is the study of politics. In addition, value is a concept borrowed from sociology and psychology. In the same way, culture also has a strong social meaning, and is often used by social scientists in the context of society or social meaning.

From Economics and the discourse of economics:

• **commercial values** - use values in the form of tangible financial returns, delivered through the operation of markets
• **Use values not captured within markets** – e.g. access to beaches or the countryside, free entrance to museums
• **Non-use values**
  ○ **existence value**: people value the existence of a cultural facility or heritage item regardless of whether they wish to take part in it or use it themselves
  ○ **option value**: people want to keep open the possibility of using or enjoying something in the future, even though they don't use it today
  ○ **bequest value**: people value leaving something to future generations

From anthropology, the notion of cultural value:

• the explicit recognition of non-economic values
• a discourse that allows discussion of **historical**, **social**, **symbolic**, **aesthetic** and **spiritual values**
  ○ **historical value**: a special relationship with the past - a concept resting on particular viewpoints of history
  ○ **social value**: places or things that tend to make connections between people and to reinforce a sense of unity and identity
  ○ **symbolic value**: repositories of meaning
  ○ **aesthetic value**: a highly problematic area of enquiry involving dispute not only about what is beautiful but also about who has the power and authority to take decisions about what is beautiful
  ○ **spiritual value**: addressing aspects of the religious, the numinous and the sublime

From environmentalism:
• a **duty of care** in relation to finite and threatened resources, allied to the idea of sustainability • the concepts of **intergenerational and intra-generational equity**, involving fairness and equity • the understanding that **diversity** is required to produce a resilient whole system • the **precautionary principle** that irrevocable change demands a higher degree of caution • the recognition of creativity and fecundity as signs of systemic resilience

Table 4.2 Summary of influences and discourse after Holden (2004: 35-45 and Hewison and Holden 2004: 25-38)

Author / Value	Drury and Mc-Pherson (2008) English Heritage	Hewison BBC Hidden Treasures	Throsby (2001	Hewison and Holden (2004) HLF	Holden (2004) Demos	English Heritage (1997)	Carver (1996)	Lipe (1984)
Aesthetic	✓		✓	✓	✓	✓		✓
Authenticity			✓					
Bequest		✓	✓		✓			
Communal	✓							
Cultural						✓		
Economic/ Market						✓	✓	✓
Educational/ Academic						✓		
Emotional		✓						
Evidential	✓							
Existence		✓			✓			
Historical	✓	✓	✓	✓	✓			
Inform-ational							✓	✓
Resource						✓		
Recreational						✓		
Social/Com munity	✓	✓	✓	✓	✓		✓	
Spiritual	✓		✓	✓	✓			
Symbolic			✓	✓	✓			✓

Table 4.3 Table comparing value types by as preferred by various texts and organisations

Value	Meaning and influences	Notes
Aesthetic	This derives primarily from an appreciation of style, beauty, or art. To Throsby (:84), the site or object must display 'beauty in some fundamental sense', likewise a landscape or the 'relationship of a site to the landscape in which it sits' can also be said to have an aesthetic appeal and value. Aesthetic value is often gained from the physical nature of the object or sites themselves and does not always require contextual information, and this is the value that is most appealing to collectors of art and antiquities. A potential conflict here is that between aesthetic and historical or existence values, while collectors may give primacy to the aesthetic value over context, archaeologists, historians or historic environment champions on the other hand tend to value the information provided by the site or object. Value here is seen as being the context rather than the object, although value must surely be enhanced by contextual knowledge, which provides both legitimacy for objects and sites, and augments the aesthetic value by preserving the context. This conflict is illustrated in the literature by	- Preferred measure of both **cultural economists**, and **heritage organisations** alike. - tension and contradiction are often at the heart of determining **aesthetic** value

	for example Holden who sees aesthetic value as '…a highly problematic area of enquiry involving dispute not only about what is beautiful but also about who has the power and authority to take decisions about what is beautiful.' Aesthetic value can also be a way in which 'people draw sensory and intellectual stimulation from a place', and may also be the result of a conscious effort to create an aesthetic. There is also considered to be an intrinsic link between aesthetics and design, and in the heritage and conservation fields changes over time can be seen as both positive and negative, and can therefore both enhance and detract value, therefore work such as renovations and restoration can likewise have the same effect. Aesthetic value appears to be a popular theme amongst the authors studied here, with six of the eight papers citing this value. Although culturally specific it remains important to the heritage sector overall	
Authenticity	To Throsby, a site is valued because it is real, has historical integrity and is unique. Integrity is the important value judgement here, according to Throsby in particular, as protecting integrity and the value that has given to a place or site is an important factor in decision making for the future	- Only really considered by Throsby - other commentators see **authenticity** as an integral part of **historical** value
Bequest	Derived from use and non-use values, as an element of the theory of existence value (see below), in heritage terms bequest value is associated with notions of legacy or inheritance; ensuring the historical assets that we value can be passed to the next generation to view or learn from. Part of the value is the passing on of information and knowledge from one generation to the next, thereby forming a link between them. Learning is also enhanced by the knowledge of the things that are valued by one generation even if the received view is changed or adapted by the next generation	- Strongly influenced by the language of Economics - Developed from and seen very much associated with **Existence** values - Considered important in heritage sector by Hewison
Communal	This is peculiar to the English Heritage report, although it in effect reflects other authors' social value criteria. It appears the authors relate communal value to collective consciousness and memory, particularly with an event or place that is associated with a historical event. This event has resonance with the public and is something to which they can relate. Memories, memorials and places associated with war are particularly good illustrators of collective or communal value, although many other buildings and memorials exist that have an interest for groups of people locally or nationally, for example disaster or remembrance memorials or those buildings or sites commemorating a historical event	- Noted from the EH 2008 report only - Should be considered the same or a part of **Social** or **Community** value
Cultural	This is now considered *the* overarching value (see discussion above) however, in 1997 English Heritage considered this to be a broad value for understanding and developing a sustainable policy for preservation of archaeological sites, from which the meaning of cultural value was derived as a sense of communal public asset	- Noted from the EH 1997 report only
Economic/ Market	This is in effect an overarching value, and comes straight from economics. This value comprises a monetary benefit to the cultural resource or object. As examples one may include utilitarian uses, such as adaptive reuse of historical buildings; the use of artefacts as commodities, for example in the art market; and heritage or cultural tourism. To cultural economists such as Throsby (2001: 78-9) cost benefit analysis is a significant part of the understanding of the role of cultural and cultural capital in relation to other tenets of economics, however this still requires some form of 'assessment of benefits' or 'cost-effectiveness analysis' (*ibid*:78). Although the traditional economic assessment tools are one of use, non-use and so on, it is Throsby and later authors such as Lipe who draw together the strands from cultural resource management to widen the assessment	- overarching theme, which comes direct from **Economics** - Favoured by cultural economists and a part of early work on value in archaeology such as Lipe (US), Darvill/Carver (UK), and EH in 1997. - Now widened to include a base of

	toolkit to include notions of value	what constitutes economic benefit
Educational/ Academic	English Heritage's early study noted this value as one of the significant factors for sustaining archaeological sites, and is one of the common themes in all of the studies undertaken by archaeologists for example it is called *informational* value by Carver (1996), and *evidential* in the EH 2008 work	- Noted from the EH 1997 report only - Important to archaeological sector, other commentators use **Educational/Academic**, **Informational** and **Evidential** values interchangeably
Emotional	To Hewison, value here is defined by how people response to something, this is very much tied together with aesthetic and spiritual value, yet importance can be assigned to sites, objects and places which evoke an emotional response in somebody or more strongly in a particular group of people. This can also be linked to identity and the strength of feelings that are evoked or created by a site	- Only considered by the BBC programme (Hewison) as a separate value category - The **emotional** response can also be considered as either part of the **social** value or as a response to either **aesthetics** or **Information**/ **knowledge** value
Evidential	Evidential is again something favoured by Drury and McPherson (2008: 28). To them the value derives specifically from 'the potential of a place to yield evidence about past human activity'. This type of value is of particular importance to archaeologists hence its inclusion in the English Heritage report, as it relates in particular to the material record, or physical remains which provide the information on past human evolution. In essence, what Drury and McPherson are talking about is informational value, although a specific part of the information spectrum which relates in a direct way to the archaeological point of view. Primary source material is important in all senses of the historical and natural world, and is not necessarily age dependent, provided that the site or material is strongly indicative and illustrative of a poorly defined subject. Also, it is important to show the linkages through the value system, in that what is inherited from one generation to the next also has an evidential value. Gaining knowledge or interpretations, and knowledge transfer from our own inheritances is as important as the bequest value which is more about what we hand on to the next or to future generations	- Only seen in EH report. **- Evidential** value may indeed be something archaeologists value, however this is linked in to the more universally themed **information** value - whilst specific to archaeologists other commentators also see **evidential** and **authenticity** together as forming an equally integral part of the **historical** value
Existence	Existence value in this context comes from 'use and non-use values' (see section 4.4.4). The value placed on a site or object is based on its existence and in heritage terms its survival. This has an alternative position, in that the loss of something, its decay or destruction creates unease or dismay. In heritage terms the existence of sites, places or objects helps to add to our knowledge and to underpin views of identity, loss of heritage, and the destruction of sites likewise provokes a feeling of erosion in values that underpin this identity. To Hewison, existence is very much coupled to notions of bequest or inheritance. If something historical has survived it therefore has some form of intrinsic value, but part of that value is in the information that a site or object contains. The bequest value in a site or object is taking that information and preserving it for or transmitting it to the future. Notions of bequest and inheritance are therefore also linked to	- Translates well from **economics,** to heritage, so in this sphere, for existence see survival of sites. - the survival of sites links through to identity through the survival of iconic things - preferred by Holden and Hewison - See also **Resource** value from EH 1997

	management through ideas of stewardship or guardianship. Looking after the historical assets we value in order that we have something for the next generation to inherit. There is no guarantee that the next generation will value the same things as today, however, the value that something has because it has survived provides a tangible link from one generation to the next	report
Historical	To Holden (2004: 35) historical value means having '…a special relationship with the past, a concept resting on particular viewpoints of history'; in other words items of cultural capital which are regarded as tangible links to the past, and are valuable as such. Having provenance and 'being historic' are both factors towards value; however the value itself is intrinsically linked to the site or object in an easily identifiable form. Having historical value helps to define identity and provides a 'connectedness' and in the case of iconic sites such as Stonehenge provide 'symbols of national identity'. Historical value can be considered as illustrative or associative, such as an item or site which illustrates a part of 'our' history or forges a perceptive link between past and present, or one which is associated with an historical event or with a historical person, thereby creating a different type of connection with that person or time. Historical sites that demonstrate illustrative value can help identify regional differences as distinct from national identity, i.e. a style of building or landscape. A good illustration of the associative side of historical value is parks and gardens; those designed by or even just affiliated to Capability Brown for example have an enhanced value	- Inescapably important for creating value in heritage terms - Historical value is not just the age of something but also associations with events or people -Landscapes can also be historical - Preferred by the more recent value commentators, although not by the generation of authors that includes Lipe
Informa-tional	This is essentially the value of information, knowledge, or data. For archaeologists (e.g. Carver 1996) this value is considered paramount, as it is the knowledge gleaned from archaeological sites that archaeologists pursue. Sites providing such informational potential are often nondescript and a far cry from the famous tourist sites that appeal to many peoples' sense of heritage. In real terms information value is also the key to determining things like authenticity, evidential or historical value	- Informational value is strongly influenced by theoretical thinking outside of the heritage sector - informational value is a key part of determining a range of other values - The fact that informational is not specifically used by any of the authors suggests that information is implicit or seen as key to other values not just on its own
Resource	Resources value was considered strongly as part of the sustainability argument made by English Heritage in 1997. It was argued that it was more economic and energy efficient to re-use assets rather than destroy and re-build from new, therefore persevering and re-using heritage assets such as buildings provided an additional strength. The assets were considered as a **resource** and the value is centred on re-use and preservation of what exists. It does not translate as a concept to archaeology, where re-use of assets does not have same meaning as it would for buildings	- strongly linked to built heritage and sustainability/embodied energy debates - Linked well to **existence** value in later studies
Recreational	The historic environment is considered to play a strong role in providing public enjoyment. Sites are open for people to access and enjoy. This is a specific type of outcome heavily linked to people's perceptions of the areas and resources around them	- Only considered in the EH 1997 report, not noted by other commentators, however this is something which is embodied in **social** value

Social/ Community	Although Drury and McPherson (2008: 32) place social value as part of communal value, others e.g. Throsby, Holden, and Hewison, see social value as an overarching theme. To Holden for example social value can be assigned to '…places or things that tend to make connections between people and to reinforce a sense of unity and identity.' This is, in part, an extension of the concept that culture can be interpreted as shared values and belief systems that unite societies and communities together. To some extent, therefore, communal and social value are similar and share common themes. Social value is seen as collective, and connected with identity, nationhood and place. Sites or places with social value provide coherence and acquire value through past events. Sites with social value need not display other values such as great historical and aesthetic attributes, except that they have developed a public resonance. Integrity is also less important in terms of physical remains as power of the place or association with past events may be enough on its own to create social value. Monuments of national importance are considered to have social value, because of the role that they play in demonstrating identity. The other side of the spectrum, and an example that has in recent years been a demonstration of social values in operation, is the past candidates and winners of the 'Restoration' television programme. A number of examples have presented attributes which appeal to the public and therefore have a strong social value, although often lacking more obvious expressions of historical or aesthetic value. On occasions the opposite has occurred, in that those buildings with strong architectural, associative and historic values have been rejected (http://www.bbc.co.uk/history/programmes/restoration)	- **Communal, social** and **community** would seem to perform the same function in developing value - Preferred mechanism for value by almost all commentators - EH 1997 uses **recreational** value, which is linked to this value
Spiritual	This relates to a specific type of value variable, attached to sites which have sanctity and are places of worship. Places and buildings associated with a belief system, religion or those that represent views of past worship are also considered to have a spiritual value. To Holden spiritual value goes further, in that it addresses '…aspects of the religious, the numinous and the sublime'. Although places of worship are the obvious examples, spirituality can be found in many more mundane places, which are nevertheless linked to a belief system, such as holy wells or road side shrines. Places of historic value can also gain secondary spiritual value through later use. For example the church at Knowton Rings in Dorset is built inside a Neolithic henge. Drury and McPherson argue that places that inspire awe or wonder can also be included as spiritual or as having spiritual value, whereas Throsby notes a value associated with places which cross national boundaries because of the interconnectedness of community linked by a spiritual theme	- A very specific type of value, - Wide reaching in it recognition of multiple faiths, multiple forms of spirituality - can be a theme that runs through or parallel with other values such as **historical**, **social** and **symbolism**
Symbolic	This is particularly about meaning and information, in particular what Hewison and Holden (2004: 26) call 'repositories of meaning'. Sites which exhibit strong symbolic value through what they represent help to create and form identity. These sites are also important in education, in passing information on, and in passing forward notions of cultural identity. In historical terms sites are symbolic of, or associated with the past, and therefore are also a culturally specific piece of 'our' heritage. They may also act as part of an experience of heritage and of the past	- some see **spiritual** and **symbolic** as similar - Hewison and Holden suggest that symbolism as with meaning, so therefore symbolic value has a role in social values, and iconic sites

Table 4.4 Analysis and assessment of the value criteria

The value debate is framed by economics, where understanding intangible assets is significant and is a recognisably important part of how economic structures work. Intangibles are another term for those things on which it is impossible to put a monetary value, yet are considered important overall. If it is clearly understood that intangible assets provide qualities that play a major part in the market, that they also play a part in the functioning of culture in the economy, and in particular archaeology and other heritage resource management sectors such as museums, governing bodies, and heritage funders. Heritage resource management, and archaeology in particular, are full of intangible elements, hence the need to move towards a system which can provide a sound understanding of how our assets stack up. This is not dissimilar to what people have tried to do in the past, in particular with Monuments Protection Programme and site assessment. However, cultural value is more widely recognisable outside archaeology and works towards intangibles as a function of society as a whole, and not just of the subject or sector in which comparisons are sought. This, then, is not just about putting archaeological site against archaeological site, and identifying the best ones, but it is about valuing sites in a system that can also be used for natural resources, objects or works of art. A leading exponent of the study and analysis cultural value suggests '…cultural value, for all its ephemeral, shifting, incoherent and even irrational properties, is likely to influence peoples' decision-making in regard to cultural goods and might therefore affect desirable patterns of resource allocation in this area in ways that cannot be fully captured by standard economic analysis' (Throsby 2003: 282).

If it is understood that the intangibles are an important part of society and of economics, then the evaluation of intangibles is also important. There would also seem to be a logical and important need to find a shared definition or characterisation criteria in the values discourse. The need to develop a consistent language is inherent in any system which seeks to be universal. Although, as discussed above, finding a consensus on a common approach is an achievable aim, it has yet to be fully reached and realised. As Throsby suggests '…there is a challenging task ahead, namely to work out whether methods [and] other approaches can be extended to account for these wider

dimensions in their application to art and culture, or whether entirely new techniques of measurement, perhaps adapted from other fields, need to be developed' (Throsby 2003: 282).

Economics is not the only driver in the development of cultural value. Anthropology, for example, also recognises that there is a perceived need in society to understand significance, and to assign values to this significance. Environmentalism and cultural/heritage resource management also add something of their own to the debate, in particular the concept of sustainability, and also an understanding that resources are often finite and non-renewable and that we have a 'duty of care' to the next generation, or 'intergenerational equity'. Sustainability and inheritance reflect recognition that there are significant social and community values for heritage. Long-term, sustainable outcomes ultimately depend upon public involvement in, and acceptance of, heritage. All heritage decisions are to some degree based on understanding the role of cultural capital and calculating the cultural value of our heritage assets, however complex a calculation that proves to be.

Cultural value and wetlands

Having identified the main categories for value assessment, a number of questions remain in relation to applying cultural value to the analysis of wetland archaeological sites. In particular, is it possible to use the categories to assess sites, and can value be translated to wetland sites? If so, what are the major values of wetland sites, and in which categories do they score highly in? Perhaps more fundamentally, which criteria should we use to judge the sites by, seeing that a number of different solutions have been proposed?

As far as can be established, nobody has tried to assess the cultural values of wetlands and wetland archaeological sites by the frameworks that are discussed above, particularly the asset assessment practices currently favoured by organisations such as English Heritage and the Heritage Lottery Fund. The cultural contexts of wetlands, and more specifically archaeological sites in wetlands, have been discussed and debated in academic literature in the past (see Van de Noort and O' Sullivan 2006). The categories for assessment that are currently being applied to other types of cultural capital

have, however, not been applied or discussed in the wetland contexts. Although wetlands are primarily perceived as natural environments and natural ecosystems, the cultural component of wetlands landscapes has been shown over and over again to be an important part of how the areas have developed, and how these are perceived and understood. Wetlands, and in particular archaeological sites in a wetland context, should therefore be seen as items of cultural capital and areas with a cultural interface. The cultural value markers or indicators in wetlands are now normally understood to be:

- The preservation environment, which provides an opportunity and potential to preserve material cultural, in particular organic remains. These opportunities are sometimes rare and unique.
- The preservation environment also provides an opportunity to look at landscape, climate and environmental change over time through the study of micro- and macro-fossils which are preserved in wetlands in stratigraphic contexts.
- Wetlands landscape are, to a lesser or greater extent, modified cultural landscapes. To understand a landscape fully its development and historical perspective are required in particular.
- Interaction between humans and wetland environments has been taking place throughout history and prehistory, with activities as diverse as resource procurement, settlement, and transport.
- Outside the general domestic sphere of interaction, wetlands have played an important spiritual role in society, linked to spiritual and ritual activity, death and burial.
- Archaeological sites or sites with material cultural are regularly found in wetland contexts or in wetlands landscapes. This includes sites found on pre-mire development surfaces, sites which fringe wetland systems, sites built on wetlands, and in some cases the wetland body itself.

In terms of the categories described above for site or asset assessment wetland landscapes may not always score highly in aesthetic value, although

they have a number of characteristics which can provide an number of the value characteristics. These are presented below (see Table 4.5)

Value	Analysis	Potential Score
Aesthetic	Wetlands and wetland sites do not score highly in aesthetic terms either in the landscape or the archaeological sphere. Often the remains are very unusual or there are rare and special objects, and to some wetlands are beautiful places, however it may not be considered a conventional type of beauty. There are also wetlands in scenic places such as estuaries or along the coast, but in these cases often the riverine location is prized not the wetlands that exist there	Low
Authenticity	If a site is valued because it is real, is unique and has historical integrity the wetlands sites have this for sure, however so do other types of archaeological sites and remains. Integrity is very important to archaeology as a whole	High
Bequest	In a cultural sense wetland environments and sites in wetlands score highly. Although inheriting wetland in a strictly environmental valuation is also important, it is the information they contain about past communities and about climatic and environmental changes that is so important. It is important to preserve and maintain sequences and pristine examples in order to pass on this information	High
Communal	Communal and social value of wetlands is significant, particularly in a cultural context, however people may not ordinarily relate to the historical side of wetland environments as they would to more immediate archaeological sites or cultural icons. The value in terms of place and loss is more tangible in the communal sense	Moderate
Economic/ Market	Peat extraction was once the main economic activity, but improvements in land drainage combined with fertile soils have meant that agriculture has become the main driver, particularly in the areas of former wetland. As a part of the cultural economy, wetland archaeology and wetland in general only play a small role, however there are still a significant group of people who use the cultural aspects of wetland for leisure, e.g. visitors to Wicken or Flag Fen, people who visit sites in wetland landscapes such as monuments on moorland, and uses of those environments for other leisure activities	High
Educational/ Academic	The potential here is very high, see evidential below	High
Emotional	An emotional response is difficult to ascertain for a cultural wetland asset, response to a loss for example, is likely to be similar to that of loss of wetlands in a conventional conservation sense, however peoples' responses to a bog body are much more tangible and these strongly identifiable wetland specific objects evoke a strong and positive emotional response	Moderate
Evidential	The potential here is very high. In general, wetland sites have a higher than average evidential value when measured against a standard archaeological site. Cultural information which is invested in these sites and in also in bogs in general can be substantial and is informative in a	High

	number of different sectors academically. Evidential response is a significant part of a wetland site's historical and informational value	
Existence	The arguments in favour of wetlands having existence value is strong, particularly in a conservation sense, where survival of intact habitat is important and valued, likewise the loss of wetlands are mourned and campaigned against. That the existence is historical and the entity is also cultural not just environmental is often lost in the arguments and not well understood by conservationists and the public alike. That said, the existence of archaeological sites in wetlands is important and they have significant informational value which makes their existence more valued	High
Historical	Archaeological sites in wetlands must rank as some of the most important archaeological sites in the UK for a range of reasons. Historical value is therefore high	High
Informational	Information value is higher than for most archaeological sites. Even if informational value is taken as potential, then the range and type of information available from a wetland site is important, both in the academic sense and in the potential of that information to advance our understanding and perception of past communities, past climate and also future climatic and environmental changes	High
Resource	Initially this value was targeted to the built environment and re-use of buildings, however peat presents an amazing resource and one with wider societal benefits as a carbon sink and store of wider information useful outside the archaeological sphere e.g. palaeo-climatic data	High
Recreational	Only as part of access to the wider countryside. Only a handful of specific wetland sites open to the public	Moderate
Social/ Community	The social value of the cultural side of wetlands is not just in the perception of wetlands to society, which may not be significantly higher than for other landscapes. They are however significant to society in terms of information value which has a social and cultural context. Information retained and provided by these sites provides significantly more information on human eco-dynamics, climatic change, and landscape change over a significant period. The social value provided by historical information can be enhanced significantly by that which is preserved in wetland areas	High
Spiritual	Historically there are much stronger associations between past communities and wetlands, and both prehistoric and historical societies have imbued wetlands with a spirituality that is only glimpsed through chance archaeological discoveries. There are associations between past human societies and wetlands which are entwined with wilderness, death, burial, worship and so on. Some of these are still echoed in current spiritual responses to wetlands. The spiritual attributes ascribed to wetlands are often found in things like literary references where the environmental context is imbued with mysticism, darkness or romance. Wetlands are often used as metaphors for a wider cultural phenomenon	High
Symbolic	Wetlands also historically have had a strong cultural symbolism, which is linked to that expressed for the spiritual value above. Symbolism is perhaps less strong today and although archaeological sites in wetlands have	Moderate

	a role to play in shaping and informing the current symbolic value of wetlands, they are not primary to it. Wetlands are less symbolic or emblematic than other monuments, sites or buildings; although there is a contrast to between how symbolic past wetlands must have been for prehistoric and historic communities and are less so today	

Table 4.5 An assessment the cultural values of wetlands and wetland habitats by the proposed criteria, and potential scoring

To sum up, wetlands can only really be considered to be of low cultural value in an aesthetic sense, but culturally they score highly in terms of informational, evidential and historical value. Cultural aspects of wetlands are less valuable economically and perhaps score only moderately well in a pure market sense against other heritage and cultural assets, but they are authentic, and also have a high spiritual value. It is perhaps not easy to determine the communal benefit, but in a broader overarching social sense they have a high value. It is fair to ascribe less value to the symbolic and emotional response to the cultural side of wetland, but there is a high bequest value, and in terms of use and non-use values there is a strong case for their existence. Specific and individual sites may vary and this variation will be explored in the case studies. Overall, however, it is generally apparent that wetland sites do have a high cultural value, and score highly in a range of value assessment criteria.

4.6 Summary

The forces that enable archaeological management, e.g. legislation, policy development and funding were outlined in the previous chapter (See Chapter 3) however the conclusion from work such as the Monuments at Risk Survey suggests sites have in reality not fared so well. The management of archaeological sites is evidently a complex issue. It is therefore an aim to understand why, in spite of safeguards, sites have been lost and will continue to be lost. The aim of the chapter was therefore to explore the current reality of archaeological management, in order to come to an understanding of how site management has developed in an academic and practical context.

In addition, it is recognised that documenting cultural and economic scenarios for archaeological sites is a process that has not yet been fully explored for wetland environments. It has therefore been necessary to look at all the developmental factors that feed into this process in order to create a reasonable understanding of the position. This includes analysis of the mechanisms and theories behind research frameworks, and management plans, value and scoring techniques used in previous management programmes, and cultural value. This in particular is a more recent addition to the debate on alternative worth systems and has particular resonance throughout the current cultural and heritage sector.

Chapter 5 Case studies and modelling

5.1 Why use case studies?

This aim of this section is to introduce the case studies in the forthcoming chapters (6, 7 and 8), the layout, source material and the methodology for assessment; in particular, using the criteria for analysis developed in Chapter 4. It is clear from the previous chapters that the issues surrounding the management of wetland archaeological sites are complex. The intricate nature of the material resource and its preservation environment provide value; however the practices that contribute to its management are created from a legacy of legislation, policy, academic research and experimentation. A number of changes to the underpinning doctrine have also added new policy positions and theoretical constructs to the current approach. To evaluate this position it is important to see what effect this changing pattern has had on the management of archaeological sites and to look at this on the ground at first hand.

As discussed in the introduction and the previous chapters the approach adopted here, is to use a number of archaeological sites in wetlands or wetland contexts as case studies. The selected studies need to fulfil a number of important requirements. Because the legislation and policy context being considered are from England, then the case studies also need to be English. The sites also need to have been surveyed or excavated in the past and for the resulting published information to be publically available. This enables a base level of information to be established on which to build analysis. The approach also needs to ensure that each case study is understood, with sufficient background information by which to make an informed judgement. Three differing case studies, with an in-depth analysis and breadth of subject material, are therefore considered to be an appropriate number of examples by which to assess the position developed for this research. The sites offer enough variability in geography and archaeology to provide a reasonable range of situations, but enough similarity to enable comparison. A deeper analytical approach to context and history is considered a more appropriate response than to look at a large number of sites in less detail. In addition, the case studies chosen for this

thesis all demonstrate aspects of current practices in the management of archaeological sites in wetlands.

The first case study concerns Borough Fen, and is presented in Chapter 6. This is an Iron Age ringwork in the Fenland east of Peterborough is the first, and demonstrates many standard management techniques, such as management agreements and environmental stewardship. The second case study is Sutton Common (Chapter 7), on the edge of the Humberhead levels in South Yorkshire. This Iron Age marsh fort has recently been extensively excavated and the site has undergone considerable analysis in order to effect better management. The third case study is focused on an Iron Age post- alignment near Beccles in Suffolk (Chapter 8), a recently discovered archaeological site in a wetland. The approach used since its discovery demonstrates much in the way of current thinking towards the management of sites in the future. Some approaches developed at Sutton Common are therefore being applied at Beccles.

One of the developments from the work at Sutton Common was that sites need to be assessed individually in a specific way in order to comprehend their complexity, including the analysis of localised factors such as land use and the burial environment. A case study approach in effect delivers this thinking and provides in-depth study. This analysis will consider whether bespoke management plans are the best way in which to deal with the nature of complex sites.

The use of case studies also has a wider importance in the study of wetland archaeology, with projects such as Monuments at Risk in England's Wetlands (MAREW) advocating a site-focused approach, and the Heritage Management of England's Wetlands (HMEW) project also having identified individual sites and then developed a case study style approach. Two of the sites chosen were defined by HMEW as being in the 'top twenty' wetland sites in England, and would have an archaeological and management history that was accessible. The third site, Beccles was discovered only after the HMEW research had been completed, however, it is of a similar level of importance to the other two.

It was also apparent during the MAREW survey that the management of wet archaeological sites was not well understood by archaeological

managers and curators. It is possible that the issues that relate to the management of wet sites are too complex to be dealt with in the current curatorial sphere. It is also likely that the mechanisms available to curators are broad and inexact and do not allow for the more complex management of the wetland resource. It is important therefore to look at examples of different types of site, and to analyse these sites in a way that provides insights into the various issues, and to provide comparisons between sites from a curatorial perspective. In particular, it is important to look at current management regimes, to see if sites are failing, or where actions have failed to deliver management benefits.

It is hoped that an approach based on three case studies will draw out the issues discussed above and deliver an understanding of management through analysis.

5.2 A note on case study layout

The case studies have been researched in a way to enable a resource assessment-type exercise to be produced for each site. Each of the sites chosen, therefore, has in the past undergone some form of academic research programme and excavation, and has a management history that is wholly or largely accessible through literature that is in the public domain. This information will underpin the analysis. It will be used to understand the site, to look at its values, and it will contribute to understanding the current management status.

In order to create the resource assessment element of the case study, the format of the HMEW management plans has been followed to some degree. The case studies are therefore broken down into five main sections. This includes a section on background information, a description of the site, and a description of the archaeology including the wet component. In addition there is a separate section on the palaeoenvironmental aspects of the site including a resource assessment of this more specialised area, and how it is different from the archaeological resource. There is also an assessment of the management history and a summary of the implications of the current situation for the future management of the site.

Where these case studies differ from the management plans developed for HMEW is in the analysis. Having identified the chosen sites, created the management history and identified the main elements and issues for the site, these aspects are all assessed against a number of different criteria and management systems (see Figure 5.1 below).

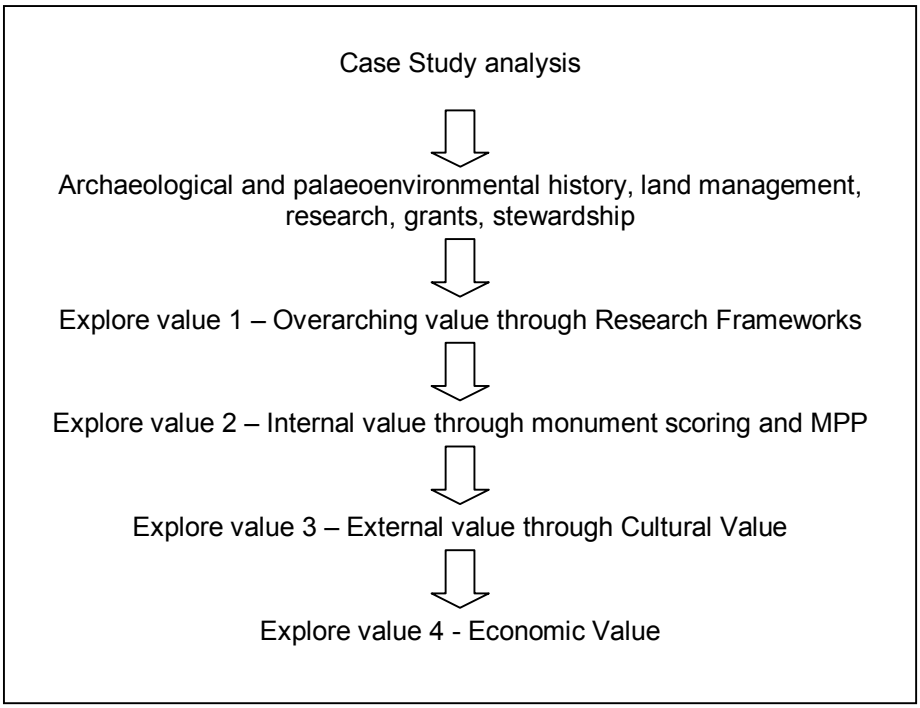

Figure 5.1 Flow chart showing case study progression

As discussed in previous chapters (see 3 and 4), these are currently the main systems of thinking that underpin modern decision-making in archaeological, heritage and cultural resource management. Firstly, each case study is looked at in terms of the overarching values used by Research Frameworks, and where each site fits within these documents. Secondly, the case study sites will be viewed through the systems of archaeological values used by the MPP and their criteria and, thirdly, the criteria used for the cultural value analysis. The sites will finally be looked at in economic value terms, in order to explore an understanding of the site economics.

In some respects these four value systems represent different approaches. The research frameworks provide an overarching set of values, often exploring national or regional research requirements. The MPP system is very much an internal mechanism, one developed by archaeologists for

archaeologists, whereas the cultural value examination has more general appeal outside the discipline of archaeology. By using cultural value criteria it is possible to compare two very different items of cultural capital, such as an archaeological site or a work of art. Here however, the cultural value mechanisms are used at to provide an indication of the value of an individual archaeological site rather than to compare them with other types of cultural objects.

5.3 A note on sources

During the research for the Heritage Management of England's Wetlands and subsequently for the Case Studies I was able to consult number of sources. These included:

- MAREW and HMEW project archives (held by Department of Archaeology, University of Exeter).
- Historic Environment Records (formerly the Sites and Monuments Record SMR) for each site, including county GIS database, parish files and map records.
- Heritage Gateway (HER online).
- National held records e.g. the Schedule of Ancient Monuments, National Monuments Register, images of England (English Heritage, Swindon).
- Local sources held in the study areas.
- Library, resources, notes, unpublished archives and archaeological texts held by the University of Exeter.
- British Library.
- Natural England (NE) records (previously Ministry of Agriculture Fisheries and Food MAFF and Department for Farming and Rural Affairs DEFRA).
- On-line national databases of publically available data from www.magic.gov.uk.
- Authors own notes and photographs.
- Unpublished excavation archives held by Hull University, Suffolk County Council and the University of Birmingham.

More than one site visit was made to each site, and notes and photographs from these visits were also used as source material.

5.4 Active and passive management

The case study analysis essentially divides management practices into two basic approaches. These are based upon either direct or indirect approaches and are grouped under the headings active and passive management (see also Table 5.1 Below).

Active management

Active management to some extent recognises the reflective management principles (see Chapter 4.2) and involves a direct physical action or intervention at a site which is designed to benefit or improve the status of an asset, site or monument. This does not just have to be a one-off event but can take place over a longer period of time, often beginning with an assessment of the monument and a research or recording programme and a strategy. Developing management plans and management agreements can also be key elements of the programme. Such approaches have been commonly used on upstanding sites for some time, particularly those with stonework or masonry, and it is well understood for historic buildings where specialist reports from conservation architects and surveyors will underpin the conservation strategy. Without maintenance, repairs or interventions the building will physically decay. This approach has been less widely used on other types of archaeological monument, although for sites like earthworks, for example, repairs and strategies for the removal of burrowing animals have been regularly employed.

Passive management

Passive management implies a kind of benign neglect, although it would be fairer to say that the management is neutral/passive rather than positive. This is happening because, as shown by the MARS survey, it is not possible to actively manage, maintain or monitor the entire resource, so for many sites there is no active management. Many of the recorded monuments

are, for example, only noted as entries on county based Historic Environment Records (HER) and for many of these very little active management actions can be undertaken. Many Scheduled Monuments exist in a similar state, although these sites are at least regularly visited, where they are monitored and checks are made on their condition. Management of the wider resource therefore relies upon third party support. For archaeological sites located in the rural landscape this often means that many of the assets are on farmland. In parts of the country where pasture predominates, sites are reasonably well protected under grassland regimes. However, where sites are under arable cultivation, the condition of many is declining. Cultivation may, or may not, be damaging a site but in many cases there is no way of knowing and the management status of these sites can only improve with changes to the status quo. There are a number of management activities which can be applied to these sites which are largely passive in nature. It is these techniques that are most regularly used by Environmental Stewardship schemes, and these include the minimum tillage and reversion options discussed in an earlier chapter (See Chapter 3 8). Although these options are valuable in managing archaeological sites, they are largely indirect and passive techniques. Although a change in farming regime is generally constructive, in the sense that it can stop further plough damage, it does not embrace an active management approach. Sites which are under reduced depth tillage options, for example, are essentially only managed indirectly as a result of changing the farming regime. There are few occasions where the best and most effective management for the site is chosen based upon the needs for that archaeological site. Site-centred or site focused management options therefore often represent a 'point in time' change or cessation of harmful activities.

The traits of passive and active management are considered below (see Table 5.1)

Active	**Passive**
• Understanding needs	• Research Agendas/frameworks
• Managing change	• No analysis/understanding of threats

- Intervention and repair
- Conservation
- Underpinned by research, specialist advice and management
- Long term approach?
- Management plans, management agreements
- Management partners

- Managed under cultivation or pasture
- Reversion to arable with no damage/threat analysis or management
- No long term strategy/ management plan –
- Benign neglect?

Table 5.1 Table showing summary of active and passive management regimes

The dichotomy for the management of archaeological sites in wetlands is that that the resource is by its nature diverse and, in order to affect positive management, there is a greater need to appreciate its complexity. The reality is that passive management approaches, in particular those targeted at only the visible part of the resource, do not protect complex sites. This is because the options do not necessitate analysis or condition assessment, nor do they seek to look holistically at specific threats needs. Vulnerable and fragile elements of material culture and most palaeoenvironmental proxies can begin to desiccate under passive circumstances. Degradation of the resource can also equate to a loss of value. Active management methodology for wetlands might then seem to provide an advantage, however management options here are equally complex and understanding the nature of the site and its preservation environment requires sound scientific knowledge on which to base the management proposal. In particular, the need to understand the basis for the continuation preservation of the resource and its survival as a waterlogged and anaerobic site is essential. It is hoped that through the case studies the value of active and passive approaches can be addressed. In particular, these case studies will be used to ask the vexed question if there is any value in a passive methodology to managed wet archaeological sites. Alternatively, how much information is required to

demonstrate value and importance in these sites in order to move the management from a passive phase to an active one?

5.5 A note about Research Agendas and Frameworks

Research agendas and Frameworks are a significant part of the approach to archaeological management in England. It was therefore important to include a section to establish how each case study fits into the current agendas and frameworks. In particular, it was important to establish which, if any, document is relevant and whether a case study has been individually recognised. Moreover, it is also important to review the role of research agendas and frameworks, as they are often viewed by managers as a response to developing and improving the overarching position and as a necessary first step to better management. Furthermore, these have been instrumental in the early history of archaeological resource management for focussing attention on specific problems and areas of need. Moreover, the sort of framework that has been developed is critical. In particular the scale at which the study is designed to reach is critical to its scope for delivery. Many frameworks for example are established at a national or regional level, and even those resource or period specific frameworks are often designed to be delivered at a higher tier.

Research Frameworks are, and must be, a passive management technique. Providing an overarching position may be a valued exercise but it cannot by its nature seek to provide specific answers. No one site is individually targeted, or given management prescriptions.

The case studies will follow the template I helped to develop for Heritage Management of England's Wetlands, which in turn used an approach established through the development of research frameworks for archaeology (see Olivier 1996). An exploration of the development of research frameworks, the creation of management plans and the terminology is also presented in Chapter 4 (see 4.2).

5.6 A note about the Monuments Protection Programme (MPP)

In Exploring Our Past (English Heritage 1991) English Heritage's criteria for defining a monument as being of national importance, and therefore as worthy of scheduling were:

- **Period-** Important to ensure the record/schedule is populated by the types of monuments that characterise a category or period.
- **Rarity-** Important to consider things like uniqueness and rarity by type of monument or by period.
- **Documentation**- As suggested, the '…significance of a site may be given greater weight by the existence of contemporary records.'
- **Group Value**- The value of one monument can be enhanced by the association of that site with other monuments. This can be a group of related or contemporary monuments, or with monuments of other periods. Monuments may also be of different periods, but related by association. This can also include landscapes.
- **Survival/Condition-** The survival of the monument is a consideration of archaeological potential, but also this latter aspect is of particular relevance to wetlands.
- **Fragility/Vulnerability**- Also an important consideration in wetland situations, but the knowledge that survival of fragile remains can survive is what give the site its value. As the report suggested, '…archaeological evidence can be destroyed in some cases by a single ploughing or similar unsympathetic treatment...'
- **Potential–** Where the importance of the remains cannot be precisely specified then an understanding of a site's potential must be considered. Again this is important in a wetland context because it is necessary to document reasons for anticipating a monument's probable existence and so justify the investigation.

During the investigation of the case studies, establishing if a site was scheduled, and then if it had had been a subject of the MPP was one of the priorities for the documentary research. This was done by cross referencing county based records with other archives, such as those held by English Heritage. One of the identifiers is the Scheduled Monument record number. A

scheduled site with a nationally identified 5 figure record number has almost certainly been revised by MPP, whereas a site with a county prefix (e.g. Borough Fen with PE 222) has not. If a site had not been covered in this fashion, for example at Beccles then the above criteria were used in a basic analysis of the site.

Each criterion from the MPP list was given a simple score of high medium or low value. Under this system 1 therefore equals a low priority, 2 a medium priority and 3 equals to a high one. The minimum point's indicator is 7, the median level is 14 and a site that scores the maximum would be 21. A point's score between 14 and 21 can be considered as a high scoring site in MPP terms, and is therefore nationally important.

Priority/value	**Score**	**Overall Range**
Low	1	7 points
Medium	2	8- 14 points
High	3	15 – 21 points

Table 5.2 Table showing MPP score ranges

5.7 A note about cultural value scoring

For this analysis, a wide range of cultural value categories have been discussed, and each site is assessed against these headings.

- Aesthetic
- Authenticity
- Bequest
- Communal
- Cultural
- Economic/ Market
- Educational/ Academic
- Emotional
- Evidential
- Existence
- Historical

- Informational
- Resource
- Recreational
- Social/Community
- Spiritual
- Symbolic

The scoring system used here reflects the MPP work (see Table 5.3 above and Table 5.4 below), which gives scores of 1 for low, 2 medium and 3 for high value attributes. The minimum point's indicator is 13, the median level is 26 and a site that scores the maximum would be 39. A score above 26 can be considered as a site with an above average assessment of cultural value. In order that the MPP and cultural value analyses are comparable then a similar approach to each must be made.

Scoring of this kind is not new and the BBC National Treasures programme also used a scoring valuation to discuss one site against another (see Chapter 4.5.2). They however only choose four indicators by which to discuss the topics. The site or item under discussion was given a value out of 10 against each topic with a maximum score of 40 points.

Priority/value	**Score**	**Overall Range**
Low	1	17 points
Medium	2	18 – 34 points
High	3	35 – 39 points

Table 5.3 Table showing cultural value score ranges

5.8 Developing a model for the economic calculation and valuation of archaeological sites in wetlands

The fourth level of value analysis for the case studies is that of economic value. Understanding preservation *in situ* is not just about recognising that sites have an economic value or that costs are incurred when management is implemented. It is however about the recognition that

to achieve long-term sustainability then the inputs and costs need to balance. The case studies will therefore be analysed in terms of the scenario presented in Chapter 4.6.5 (see Figure 4.4) to see if economic inputs and management costs balance. It is considered important to look at the reality of site economics at first hand, and to provide some fully analysed examples.

Although discourses on cultural value and the principles that underlie it have been discussed in Chapter 4, the use of a more economically focused approach has a different purpose. Many studies of value in the heritage sector argue in favour of cultural heritage as a public good, and place emphasis on exploring the cultural value of our historic resource (e.g. Ready and Navrud 2002a: 3). More economically driven arguments, however, suggest that even if heritage is understood as a public good then some recognition of the market is necessary. In particular, to provide a realistic understanding of the public's appetite for the assets in question, for its conservation or to gauge support for public funding (*ibid*: 3). In order to properly assess archaeological sites in wetlands and to create a model for future management, the overarching cost structures of a site's preservation needs to be considered in more detail. This has the potential to explore the relationship between funding and the protection of assets, and will enable the case studies sites to be viewed through the mechanism of individual site economics. Furthermore, understanding how to manage sites better in the future requires an understanding of the impact of cost of management. Here, then, an analysis of the economic drivers that affect sites in rural environments may offer an insight into the management of the case studies.

Other examples of the application of economic valuation are used more openly in the natural environment sectors, where what are called 'non-market valuation techniques' have been used for some 50 years or so (Navrud and Ready 2002: *xi*). It is however only since the late 1980s that these have been applied to the cultural and heritage sector notably for the arts, and for the historic environment (see Allison *et al* 1996; Pearce *et al* 2002: 258, Table 15.1). The value of accounting in the museum sector has also been examined (see Carman 2002: 148).

However, one of the findings of this research is that it appears few studies have been published which look at the economics of preservation *in*

situ across a broad range of archaeological assets. Moreover, available analyses which take into consideration all the economic drivers (including land and agricultural productions value and cultural value), and seek to establish the costs of the management required to achieve sustainability, are very limited for archaeological sites in the rural environment. A look at the use of techniques that have been used in the past to provide valuations of non-market goods in the conservation of the built and natural environments could provide a comparable scenario.

5.9 Techniques for the study of economic value

The theoretical question which underpins these studies is whether conservation of non-market goods can be left up to the mark*et al*one (see Allison *et al* 1996: 2), thus providing a neo-liberal model; or whether a focused cultural value approach is most appropriate. The analysis suggests that for the historic environment the market should not be left as the sole arbiter, and that a historic asset provides a special case, which does not fit a universal market model. In addition, these assets provide so many 'externalities', and are valued out-with owners, that they provide wider benefit to society; notably through the contribution they can make to the value of place and people. Externalities are considered to be non market related factors which influence decision making, including legislation, public opinion, and they bring the debate back to include the wide ranging cultural value indices mentioned in previous sections (See Section 4.5 above). The issue remains that the externalities create complex scenarios which are outside the normal market models. This makes investing in historic assets an uncertain prospect in real market terms. This is known as a '…market failure [because], benefits and costs are not borne by the same people' (*ibid*: 2).

A failure, in this context, is in effect a 'deficit' that has developed between the market/economic value and the externalities/cultural value. Understanding and assessing cultural and social value is therefore important in determining the significance or importance of the historical asset. This additional information on values can help redefine the deficit in favour of asset preservation. When considering the externalities, a number of factors can help to narrow the deficit, and also provide the impetus to reuse and

conserve assets. This includes the statutory controls provided by listing and scheduling which seek to protect the most vulnerable assets. It can also include the provision of expert advice to determine the significance of an asset and evaluate the cultural values, and public sector involvement in providing additional funding to fill the economic deficit. An understanding of the economic position outlined here has therefore become part of the mainstream thinking on heritage, in particular it has become embedded in current documents such as English Heritage's Conservation Principles and policies on sustainability (e.g. English Heritage 1997; Drury and McPherson 2008: 46).

The economic value of items in the cultural and heritage sectors 'comprises any direct use values of the cultural good or service … plus whatever non market value it may give rise to' (Throsby 2003: 279). This is an amalgamation of the direct quantifiable spend, and the harder to establish cultural or non-market value of an asset. Cultural value as previously discussed is a multi-dimensional concept, but it is difficult to quantify. The criteria are subjective, the analysis is open to interpretation, and the elements such as aesthetics or bequest value cannot be easily be placed in to a quantitative scale. A number of techniques have been therefore been developed and applied to the sector in an attempt try to bridge the gap. Like many of the cultural value ideas, these models have been adapted from the social science sphere and are underpinned by economic theory.

The main techniques used to explore the value of non-market goods are evaluated below (see Table 5.4 after Allison *et al* 1996:11-13; Ready and Navrud 2002b: 10-28).

Method	**Technique**	**Potential use for case studies**
Hedonic Pricing Method (HPM)	• Based on theoretical economics this method uses an assessment of characteristic parts to create a comparable index (see Allison *et al* 1996: 11). The model can look at the differences in value between two similar assets, where one enjoys a aesthetic, heritage or non-market advantage (see Ready and Navrud 2002b: 13-14) • This can also be used to look at changes in the market value to heritage assets pre and post-conservation (see Allison *et al* 1996: vii)	• Could potentially be used to compare sale prices of heritage assets in rural areas • The value of an archaeological site on a farm is however not valued in the same way as

	• It is however an indirect analysis (Allison *et al* 1996: 12), and is limited to assets which can be consumed, or where assets of similar scales and situations can be compared. • Mainly used on urban environments and assets, such as evaluation of conservation areas and in the US	a building in a conservation area • The value of archaeological sites in the rural economy is unlikely to affect prices or be a factor in land exchanged • Sutton Common (see Chapter 7) is the only case study to have changed hands
Travel Cost Method (TCM)	• For heritage and other non-market assets that are publically accessible and can be visited • A model of based on the principle that value is revealed by how much the visitor is willing to pay to visit the assets or how far they are willing to travel • Can be further divided into models which look at frequency or repetition of visit, or those which explore visitor choices where a range of options are available at a location (see Ready and Navrud 2002b: 15-19) • Likewise for HPM it is an indirect analysis, and although it has been used to successfully analyse access to facilities in rural areas, it has been of limited value in urban contexts (see Allison *et al* 1996: viii). Likewise, it is of limited use for heritage or cultural sites or where multiple assets are visited as part of a trip, or where people walk to sites	• Unlikely to be applicable to a number of scenarios, in particular – sites in private ownership where access is restricted – Small, isolated or individual archaeological assets – Sites where interpretation and information is limited or where limited information is available in the public realm – those where there is nothing to see above ground
Contingent Valuation Method (CVM)	• Unlike the other two techniques this uses direct consumer analysis, and it relies upon assessments made by asking visitors to state a preference, such as a 'willingness to pay' (Allison *et al* 1996: 12, see also Ready and Navrud 2002b: 19-26) • Considered to be well suited to cultural or heritage assets already in the public realm. Many studies have therefore been undertaken to look at cost valuations for a range of heritage assets and heritage scenarios such as evaluation the cost scenarios of the road options at Stonehenge, or door prices at Durham Cathedral (Maddisson and Mourato 2002, and Willis *et al* 1993) • It is widely recognised that the techniques have many strengths and limitations (e.g. Throsby 2003). It also has many variations in the approaches used, and is heavily reliant upon the quality and design of the data capture and	• Although this techniques relies on questioning and gaining information through opinions and choices the factors noted above are likely to be of relevance here. In particular – Private or access restricted sites – Small, isolated or invisible sites

	analysis. It has been seen as less theoretically rigorous but more 'democratic' (Allison *et al* 1996: 13)	

Table 5.4 An assessment of the three main techniques used to explore the value of non-market goods such as heritage assets

Is there anything that can be learnt from conservation economics techniques applied to the built environment that would be relevant to wetlands sites and in particular the case studies? Rural archaeological sites, particularly those with wet preserved deposits do have complicated needs and preservations scenarios. Understanding these needs, assessing the requirements for preservation *in situ* in the economic model could equate to the externalities of building conservation. There are however a number of issues.

The Travel Cost Method (TCM) in particular would seem inappropriate as there are very few wet archaeological sites which are publically accessible and where measures of cost or travel are factors. It could be adapted to places with visitor centres such as the Flag Fen or for those which have a public profile. For the majority of archaeological sites this method would seem to be unhelpful in particular where we are talking about sites which have a high value in informational, historical and bequest values but are not accessible or visible, and are not visited. Hedonic Pricing Method (HPM) could potentially be used where archaeological assets change hands; however there are few recorded circumstances of land exchange where the primary driver is the acquisition of the historical asset itself and discussions of economic value for archaeological sites located in the rural landscape are not well documented. The reasons for that are likely to be:

- The issues for the rural environment have not come to the fore in the same kind of way as those of the built environment, where the need to assess and calculate alternative values have become part of the practice of conservation.
- The agricultural sector with political support has dominated the rural landscape. Agriculture has an economy which has dominated the heritage sector until recently. Archaeological sites have not

been given the same voice in this sector as conservation of the built environment has in urban development.

- Archaeological sites do not change hands in the same way as other assets, particularly built heritage, therefore cannot be valued with HPM.
- Most archaeological sites are in private ownership and although the market has a major influence on land purchase, archaeological sites are unlikely to be considered as a positive asset and are unlikely to be a factor in land exchange.
- Few organisations outside of heritage bodies such as English Heritage and National Trust would consider the purchase of archaeological sites on the open market. The Carstairs Countryside Trust (see Chapter 7) and Norfolk Archaeological Trust (see Chapter 3.8.5) are two exceptions.

Of all the techniques looked at, therefore Contingent Valuation Method or CVM, is considered by the majority of studies to be the most useful technique in the historic environment (see Table 4.6 above). Dependent upon the starting point, it is also the most respected technique for bridging the gap between cultural, non-market or non-use values. Although widely applied in historic environment terms, as above for the HPM and TCM approaches, CVM has mainly been restricted to studies in the urban environment or to archaeological assets in public ownership and that are publically approachable. In particular the analysis requires public validation and the sites would need to form a suitable subject to study. Certain types of site are likely to be inappropriate for CVM, in particular assets which have high cultural values but are small and ill-defined, in private ownership and not publically accessible, or those with nothing to see, no visitors market and only a local profile.

There are also other wider issue at stake in the rural environment which affect the validity of economic value for wetland sites and archaeological sites in general. In particular there are competing scenarios, such as heritage needs versus farming needs; conservation versus heritage

or public archaeology versus private land ownership. Whilst it may be possible through CVM to look at overarching notions of use and non use value, or the loss of assets in relation to them as part of generalised group of sites the specific questions about site value cannot therefore be evaluated in this way.

Overall, it would seem that the types of site explored in this work namely smaller scale wetland sites, are not on the face of it comparable using price valuation techniques. Although wet archaeological sites can score highly in many of the cultural value criterion, they are not often open to the public, many are often in private hands and inaccessible. Much of what is valued in historical and informational value can be hidden below ground, it is therefore important to look at other ways of valuations, including those at work in the natural environment sector

5.10 Agri-environment Schemes and Economic Valuation of the Natural Environment

In the natural environment sector the need to put an economic valuation on non market resources is widely recognised technique (e.g. Allison *et al* 1996; Garrod *et al* 1994). The assumptions and analysis of these studies are also widely used in the formation of public policy (e.g. Natural England 2009) In addition, valuation of resources underpins current thinking in an unprecedented way, and investment and improvements in resource management by the public sector is seen as a way to deliver wide ranging social and environmental benefits, to ameliorate climate change and deliver economic prosperity. As previously argued, 'a healthy natural environment has enormous economic value and is a cost-effective way to deliver a wide range of benefits to society. [It is] indispensible to current and future economic prosperity, [and]… conserving the natural environment is an efficient and effective way to deliver a wide range of benefits to society' (Harlow *et al* 2010: ii). Moreover, 'the pace of environmental degradation is accelerating in many cases and this is jeopardising our ability to meet future challenges, such as coping with climate change and addressing concerns over food, water and energy security…Investing in a healthy natural

environment is essential and an ecosystems approach can help tackle future challenges in a way that enhances prosperity' (*idem*)

Because so many archaeological sites are in rural areas, including the case studies developed for this study, the debate in this sector is of relevance. The recognition of the conservation deficit in the natural environment is a key factor in the development of policy. The deficit equates to the differences between use and no-use values, with the difference being that the role of cultural value is replaced by calculations of natural value. In this case the dividing factors are between conservation farming with environmental benefits and peak land production under intensive farming system (see Figure 4.3 below). The central role taken by Natural England in the delivery of agri-environment schemes includes provision to bridge the gap between the market and non market scenarios (see Chapter 3.8). Schemes such as Countryside Stewardship and now Entry and Higher Level Stewardship (ELS and HLS) provide the mechanism for the delivery of the policies. The clearly understood principle is that in order to encourage conservation of the natural environment farmers need to be incentivised. In the natural environment context therefore, the need to bridge the deficit between agri-business and conservation farming is well understood, and mechanisms such as incentivised payments for good farming practice are already in place.

The available payments for the reversion of an archaeological site from the plough is up to £500 (per ha), and are paid annually for the lifetime of the agreement. The economic deficit for archaeological sites in rural areas is therefore defined as the gap between potential earnings at peak agricultural production and those earnings derived for a less damaging farming regime. An issue inherent with the market figure in the calculation of the deficit is that is that agricultural prices fluctuate for different crops year on year (e.g. Nix 2003; 2008). Rather than calculate the deficit according to the market change, the figure provided by Natural England is fixed. It is set below the market rate, and remains as an incentive not a replacement figure.

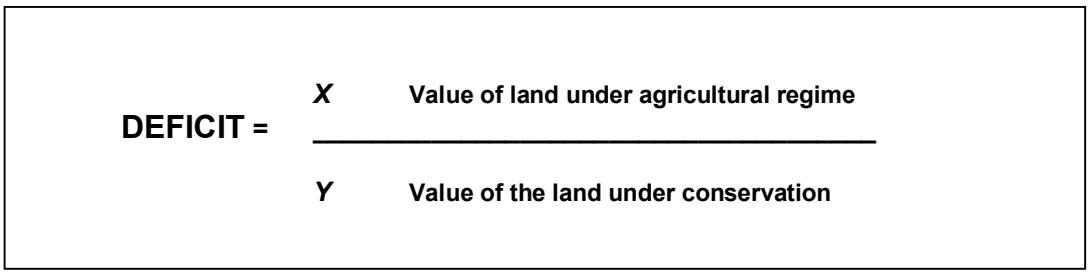

Figure 5.2 Natural England cost mechanisms for the historic environment

As discussed elsewhere (see Chapter 3.8.2), in archaeological terms this has had a profound effect on historical assets in rural areas. The schemes, which include provision for the historic environment, have for the first time established a mechanism to allow the positive management of a whole range of archaeological sites. These sites, the problems of which have been raised by projects such as MARS, have previously been out of reach to resource managers. The delivery of the schemes has made a positive contribution to the numbers of sites in improving condition.

In terms of developing a model for understanding the economic mechanisms in rural areas, it would seem that this is a straightforward equation for placing value on archaeological management. It is however a very simplified correlation and it assumes that the management of archaeological sites can be undertaken through a small number of prescribed and costed options. The options work by assuming preservation *in situ* as an overriding gaol, and that this can be achieved by halting damaging activities and stabilised the surface management. They also assume that the ownership will not change and that the site can be adequately protected, even if the emphasis of the owner is to maintain the agricultural context which surrounds the sites. Although this management is effective in reducing the numbers of sites at risk of direct harm from agricultural practices, it is passive, and does not take account of the innate complexity of the resource and its management. Archaeological sites can therefore become isolated features in arable landscapes, or incorporated into field corners or margins, where they least inconvenience the agricultural practice.

The reality is that the factors involved in archaeological management, and therefore the cost scenarios, are more complicated than the DEFRA

figures allow for. In particular for wetlands and for a wider group of archaeological sites outside of the agricultural norm a more complex calculation needs to be developed. Although this needs to include Environmental Stewardship as an important variable, it also needs to be more developed to accommodate the types and ranges of wetlands inputs (see Chapter 2), archaeological management issues (see Chapter 3), and cultural values (see above).

5.11 Developing and modelling the economic inputs required for the for the preservation of archaeological sites

The need to establish economic value is in part to enable the discussions on value to be developed further. Although largely a theoretical exercise, it does enable the cost of possible management options to be fully explored. Moreover, the discussion of the economic issues is of further interest in the wider value debate. In particular, if an archaeological site or, more specifically, an archaeological site in a wetland context is recognised to have a higher value than other heritage resources, then as society, are we prepared to pay more to preserve it? Fundamentally can the benefits of preserving wetlands and the archaeological sites they contain outweigh the cost?

There are other positions to be explored here as well, in particular the position created by an underpinning principle such as preservation *in situ.* This is a debate about preservation *in situ* versus preservation by record, where there is an inherent need to fully understanding whether or not existing management options represent a good use of funding in wetlands. Can preservation *in situ* be employed for the long term, thereby expressing a sites' bequest and existences value, and can this preservation really be assured in the longer term through current practice and intervention? Moreover, the principle of preservation *in situ* needs to be balanced against a scenario where preservation is compromised, thus requiring alternative management options such as further management intervention or preservation by record.

If we accept that economic calculations provided by the built environment are not suitable for this scenario, and that those for the natural

environment in particular the Environmental Stewardship equation are too simple, then a further more developed model is required. An attempt has been made to do this and is presented below (see Figure 5.3). The aim is to keep this discussion of preservation to an exploration of the real mechanisms that currently exist for the management of archaeological sites, thus putting the archaeological costs in a framework, but also to explore the other inputs that have been discussed in this work, including cultural and economic values as factors. The model also includes those factors that are likely to add to the cost to enable preservation *in situ* to be achieved. These are further explored as Economic Inputs and Management costs below.

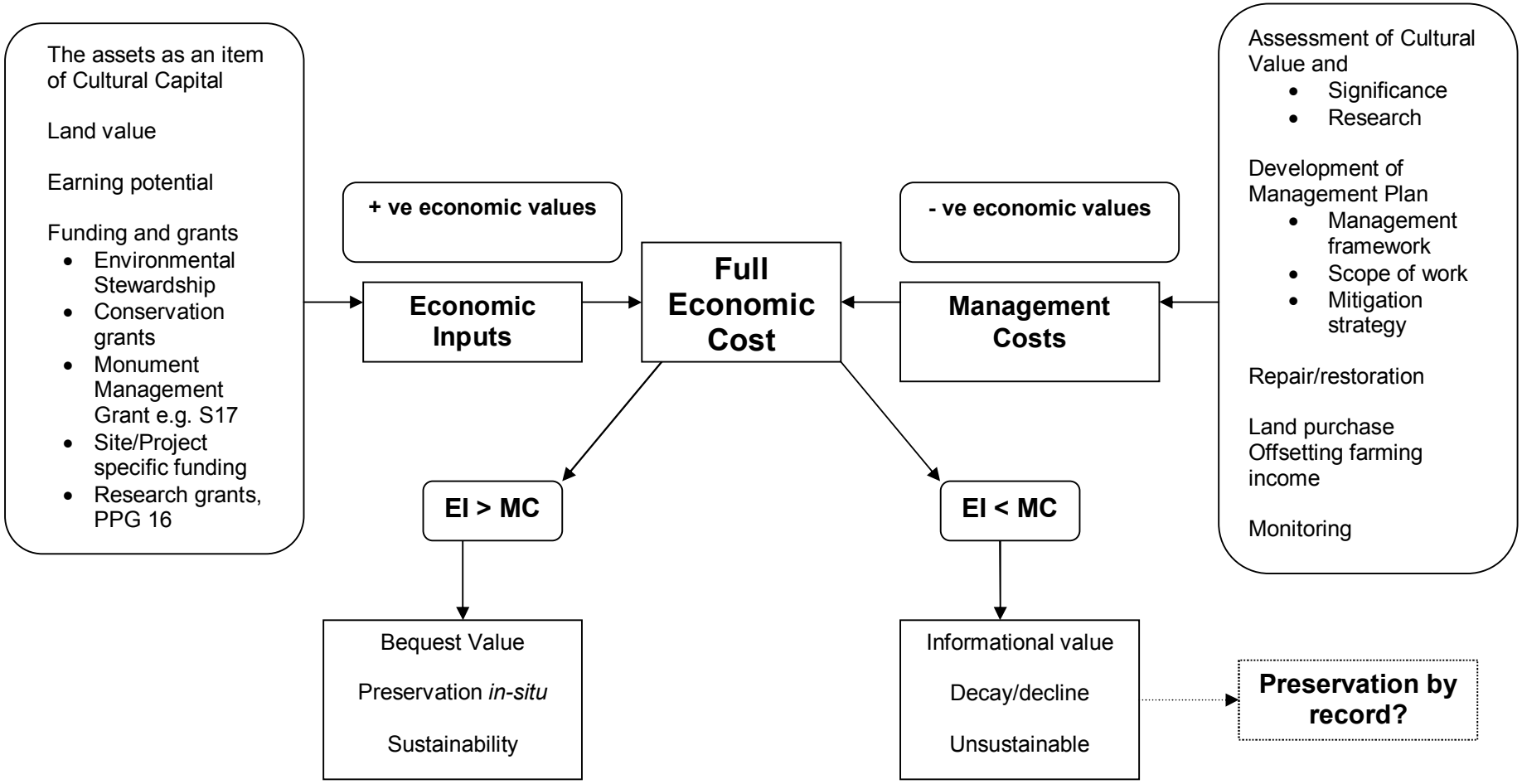

Figure 5.3 Diagram depicting the cost scenario for archaeological preservation

Economic Inputs

The economic inputs should include the asset itself, as an item of cultural capital. This can be difficult to calculate, but the asset itself as archaeology, object or material culture has a positive net value and once lost is irreplaceable. It is therefore likely to make some positive contribution to society or to knowledge. Inputs can also be made up of the value of the land and its earning potential. Very few archaeological sites in England, with the exception of Stonehenge, have a net income generation capacity from tourism or visitors, so in some respect the earning capacity here is represented by third or voluntary sector funding and grants. As part of the inputs some understanding of current funding and grants also needs to be assessed. Funding comes from a variety of sources, including those discussed above provided by DEFRA such as Environmental Stewardship, or other grants for the conservation and enhancement of the natural environment. There are also forms of funding more specific to the historic environment sector. These are sums for monument management provided by English Heritage under the 1979 Ancient Monuments and Archaeological Areas Act, or those for archaeological research. Two other sources can also be considered in the frameworks, in particular money provided through the planning system and the PPG 15/16 (now PPS 5) scenarios. The planning system also has a number of more nuanced funds which can be available to specific sites; these are often re-allocated from other developments to offset a measure of public good. These include Environmental Tax Credits, Aggregates Levies or those funds known as Section 106 grants, made available as part of Section 106 of the planning act.

Management Costs

On the side of management costs is the need to assess and understand the cultural value of assets including an assessment of their significance. This may also require research. Incorporating research as a part of the site management process has been developed as part of the research framework doctrine, where good management is seen to be underpinned by good analysis. This is particularly true in wetland sites where baseline studies provide vital information on the extent, condition and state of the resource in

question, and are used to provide an overall understanding of the site's value against the cultural value criteria by recognising informational, historic, and symbolic worth. Research can and should form a direct part of the development of a management plan, and understanding the scope of work or mitigation required.

Developing the scope of work required to manage a site is important in understanding the economic sense in that associated costs would be incurred at the repair or restoration stage of a project. The scope of works can range from essential maintenance to more specialist repairs or interventions. On buildings or upstanding remains this might include repairing upstanding masonry, or ongoing maintenance of fabric. This can however be a complicated issue for wetlands and archaeological sites in wetlands, as the physical maintenance can encompass above ground archaeological remains, but also substantial hidden on-site and off-site work related to site drainage, water catchment, water quality, and soil conditions. Wetland environments are complex and difficult to understand, and required action can involve specialists' input and multiple agency cooperation.

Monitoring is often important in providing information on the burial conditions. This has and is currently being employed at a number of sites across England, and is a powerful scientific tool in the understanding and future preservation of wetland sites. There are some potentially significant issues with the monitoring of sites, the way in which monitoring has been deployed, and how the results have been used. In particular, there have been some suggestions that there has been an element of political expediency in the use of such techniques, where analysis may have been used as a way of putting off complex, difficult or otherwise expensive decisions. Instead of informing and preserving sites for the next generations, monitoring of sites is potentially creating problems for these sites. The cost versus the efficacy of this sort of work will hopefully be explored in the case study work alongside this wider political issue.

Another, one-off cost that many need to be considered is the land purchase. This is less common and more radical but is increasingly being considered to protect and safeguard those assets which are of national importance. The main driver in rural land value is agricultural and the price is

set by the marketplace. It is normally unaffected by the archaeological asset itself. In addition, once a site is under management or has been purchased then in many agricultural circumstances a mechanism is required to offset the farming income. This is often provided by Environmental Stewardship or conservation led grants.

In summary then what are the likely implication for preservation *in situ* of the full economic cost? Understanding the cost of preservation is not simply about recognising that sites have economic values and that management has associated costs. To achieve preservation *in situ* and the long-term sustainability for the resource the scenario needs to be balanced. The cultural value of the site and its economic positives need to outweigh the cost needed to ensure preservation and sustainability. If the negative costs are higher then preservation *in situ* must be considered to be at risk, and here then is the opportunity needed to explore the alternative mechanisms such as those provided by reflection-in-action approaches. It is these scenarios, along with the premise of the diagram that will be applied to the case studies (see Chapters 6, 7 and 8), that will allow a model to be developed which takes into account these wider variables.

Chapter 6 Archaeological sites in wetlands Case Study 1: Borough Fen ringwork, Cambridgeshire.

6.1 Introduction

The Borough Fen ringwork is situated in the fens east of Peterborough. It is also known from its Scheduling descriptions as an 'earthwork enclosure at Peakirk Moor', although the more familiar term Borough Fen is used throughout this work. Between 2000 and 2003, it was studied for both MAREW and HMEW, and was recognised as one of the top 25 wet archaeological sites in England. In addition, as part of the HMEW project, I undertook the research for and wrote the management plan on which this case study is based (see Fletcher 2003).

One of the difficult issues with Borough Fen, and a problem common to other similar sites such as Sutton Common, is how the site is categorised and defined in archaeological terms. This is important when looking at the work of the MPP in particular, as all work for this project was undertaken by monument type and through standardisation of terminology. Knowing the function of a site, and to what period it belongs, is therefore significant and value is ascribed by comparison with other similar sites. As Borough Fen and Sutton Common are multi-vallate earthworks and date to the Iron Age, the classic Iron Age hill fort is therefore often considered as the point of reference and the category by which to classify these sites (e.g. Bryant 1997: 29). This is at best a loose affiliation, as these sites are situated in a low-lying or lowland context (Fletcher 2007: 170). The description of the site as a 'ringwork' was preferred by The Fenlands Survey and Malim and McKenna (1994: 53), although the problems associated with the interpretation of large imposing Iron Age earthworks in low lying areas was clearly articulated (Hall and Coles: 1994: 103). The term 'marsh fort' is perhaps more appropriate and this type of terminology owes much to the work at Sutton Common. One of the achievements of the work was to bring the work of hill fort studies into context, and to expand the knowledge on the range and complexity of Iron Age settlement patterns in England. This is however a relatively new work and was not undertaken until after the MPP had ceased. The term hill fort or ringwork is therefore the one most associated in the literature with the site at Borough Fen.

The surrounding area is also important in understanding how a site fits into its landscape, and therefore the wider contextual problems that exist. These sites are often seen only as single monuments and have therefore only been examined in isolation, without a full appraisal of the sites' context or importance. Because of the wetland character of the landscape in which the sites are located, which includes wet deposits on the site and nearby palaeoenvironmental deposits, a study of the management should not be approached without assessing this landscape context. The emphasis on both landscape study and excavation at Borough Fen, therefore, allows the detail and the context to be assessed, both on and off the site.

In terms of the Borough Fen ringwork, there are three main areas where this case study will be used to provide insightful comments and analysis.

- Extensive survey as part of the Fenlands Survey provides the wetland context and a landscape-scale analysis
- The excavation data provides information on the form, function, period of the site and information on the burial environment
- Different management regimes at both sites provide potential for analysis of effects

6.2 The site context

The objective here is to provide information on the site's situation including that relating to the background history, and a description of the physical characteristics of the site.

Background

Borough Fen is a well-preserved Iron Age earthwork monument in East Anglia, and with its fen location and low lying situation it can also be considered as a good example of a 'marsh fort' (after Fletcher 2007:170). It is also recognised as one of the few large enclosures of the region which provides evidence for internal occupation and use, and has an assemblage of dateable finds (Bryant 1997: 29).

The site is bisected by a road which was driven through the site when the fens were reclaimed. Two-thirds of the site (see Figure 6.1 and 6.2); in effect the western side, survives in good condition under pasture. This is maintained as permanent grassland, and has been seasonally grazed for many years. The remaining third of the site on the eastern side of the road was under arable cultivation during early visits to the site and has been ploughed for many years. The ramparts here have been ploughed down, and the earthwork has been badly damaged. On the grassland side the earthworks are, by comparison, in much better condition, however the 'wet' components of the site which are less visible and harder to quantify are likely to be under threat from drainage and desiccation. The damage here is potentially as harmful as the ploughing is to the parts under arable cultivation. The actions of drainage and ploughing can have serious effect and degrade the *in situ* preservation condition.

Much of the surrounding land is managed through either Countryside Stewardship (CS) or Higher Level Scheme (HLS) agreement (See Figure 6.4), although the CS agreement did not initially include reversion of the ploughed part of the site to pasture. This is now reverted under a Section 17 management agreement with English Heritage (Unpublished English Heritage Report Kenny *pers comm*.).

Interventions have been limited to survey and small excavations therefore the knowledge of the type and range of deposits that Borough Fen has are somewhat limited. From available evidence however, it is considered the potential for organic preservation is likely to be considerable, and could include preservation of organic artefacts, organic structural finds (e.g. posts, palisade, and organic objects), as well as palaeoenvironmental and geoarchaeological sequences. It is likely that significant quantities of period-specific inorganic cultural material might also be present at the site.

Figure 6.2 Borough Fen as seen from the north. (Photograph by Ben Robinson 1994, taken from Glazebrook 1997:36)

As mentioned above, field work was undertaken on the Borough Fen landscape during the Fenland Project, in particular as part of field walking and survey between Peterborough and March (Hall 1987: 26-8). This identified that Borough Fen is situated in the fens and is one of many sites which make up a multi-period landscape in the surrounding area. Here there are other sites situated around the ringwork, many of which are located on land surfaces that existed prior to the growth of the peat. In this area known sites include a group of barrows and a well-preserved multi-period field system which may have elements contemporaneous with the earthwork (*Ibid;* see also Hall and Coles 1994 for synthesis). This work has lead to the discovery of new sites, particularly the barrows, and also included extensive palaeoenvironmental work. The palaeoenvironmental survey was used to develop a landscape-scale reconstruction of the development of fen peat and landscape changes for the Holocene (see Waller 1994). Fieldwork at the site includes an excavation undertaken in 1983, carried out as part of the South West Fen Dyke Survey (see French and Pryor 1993: 68-73). In addition, the site was recorded as part of an assessment of damage caused by drainage

work in 1993 (see Malim and McKenna 1994). It has also been surveyed by the Royal Commission as a mapping exercise (RCHME 1994).

In comparison to the wider landscape, Iron Age sites in the area, such as the earthwork at Borough Fen have been paid relatively little attention, with only sites such as Stonea Camp and Wardy Hill having been examined (Hall and Coles 1994: 96-8). The most recent evidence from the ringwork at Borough Fen was collected from the cleaning of sections along the drainage ditches of the road which bisects the site (see French and Pryor 1993: 68-73). These sites have perhaps not been recognised or given the value and significance that they deserve, particularly in comparison to Iron Age sites of similar size in other parts of the country. The value of these types of remains from this period is however considered high in a regional sense as attested by the Research Frameworks (see Glazebrook 1997; Brown and Glazebrook 2000). These works, in particular the relevant period sections, continue to highlight a lack of understanding and knowledge about Iron Age settlement distribution, and specifically how sites like Borough Fen fit into wider settlement patterns (see Bryant 1997: 23-34; Bryant 2000: 14-18).

Site Description

The site (see Figure 6.2) sits three to four metres above Ordnance Datum and is a bi-vallate earthwork, 220 m in diameter. It is sub-circular and encloses an area of approximately 3.8 ha (Malim and McKenna 1994: 53). Including the outer earthworks, the whole site measures approximately 9.4 ha (see HER records).

Figure 6.2 Borough Fen looking north along Decoy Road. The ditch cuts through the interior of the site (2010)

Figure *6.3 Borough Fen looking north west across the interior and inner defences (2010)*

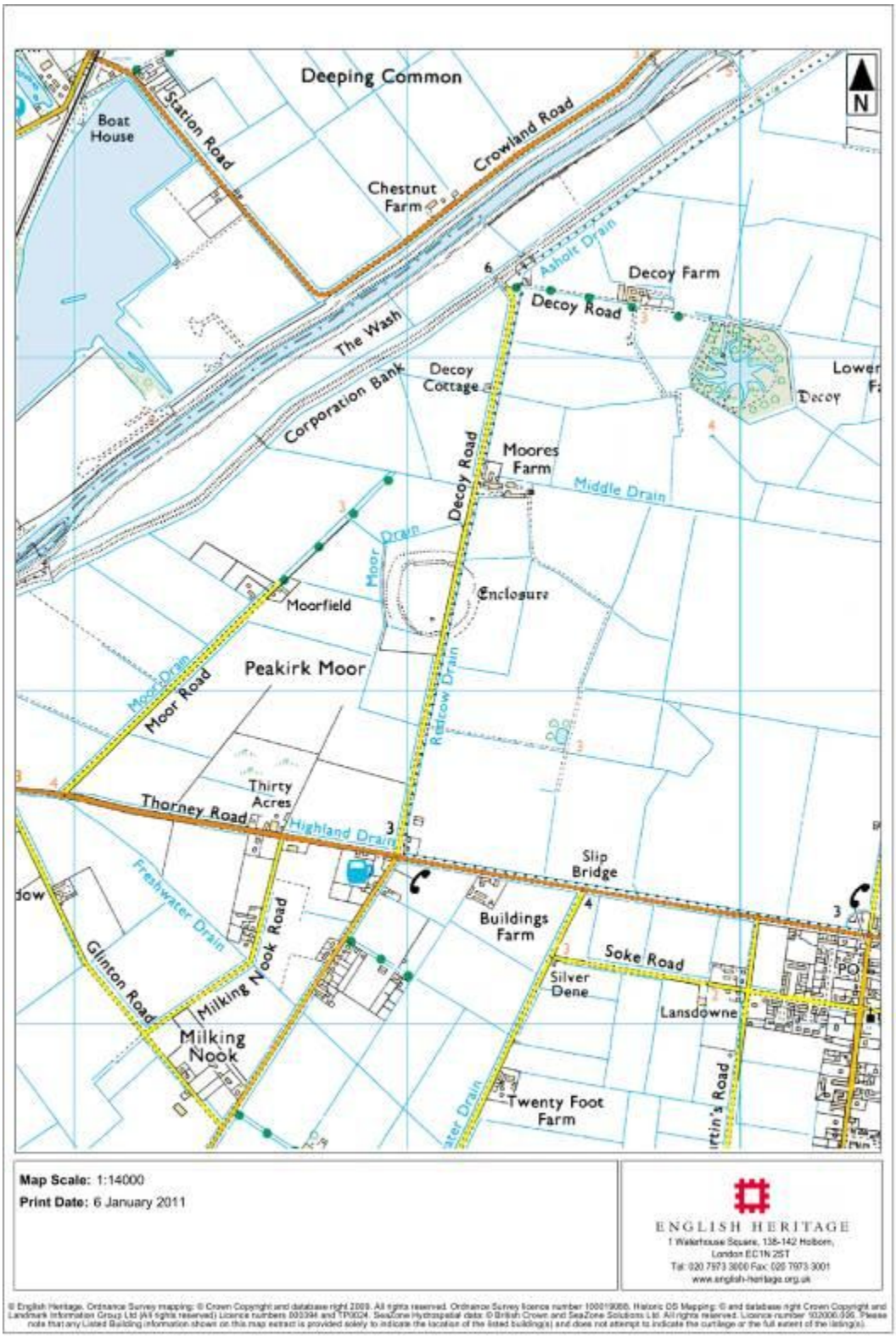

Figure 6.4 Location of the Borough Fen ringwork on Modern OS mapping (English Heritage)

It is a Scheduled Ancient Monument (SM No. PE222; HER Nos. 51313 and 50517, Figure 6.3), and is cut by Decoy Road which runs northwards towards Moores and Decoy Farms and a post-medieval star shaped Duck Decoy (SM No PE214) to the north. The road divides the areas of Peakirk Moor to the west and Borough Fen to the east, with the bulk of the monument on the western side of the road. Around a quarter of the site (under the HER record number 50517) on the eastern side of the road, has also been ploughed. Evidence from aerial photography undertaken by Francis Pryor (see Pryor 2002b, shown in plan form in Fletcher 2007:171) suggests there are outlying banks and ditches belonging to the monument, and other possible associated cropmarks in the field directly to the south and east (under HER record number 50120). Because the land has no public access, it was not possible to visit the circuit of banks and ditches that are within the protected grassland area. Any earthworks that may survive in the surrounding fields were also invisible because they were under cultivation at the time of assessment. Deep drains surrounding the site are also visible across the entire area and match those flanking Decoy Road.

Overall 6 ha of the site is to the west of Decoy Road is under pasture, 1 ha to the south of this is in arable cultivation. 2.4 ha of the site to the east of Decoy Road are reverted. These measurements are taken from the Scheduling map (see Figure 6.3 below).

6.3 Archaeology

In term of archaeological stratigraphy, evidence was provided by a small excavation in 1984 (French and Pryor 1993: 68-73, see also Malim and McKenna 1994: 58). Furthermore, an entire section through the site was recorded in 1993, following an episode of drain clearance work undertaken without monument consent along the road side (see Malim and McKenna 1994: 56). This sequence showed the remains of a 2.3m deep inner-ditch to the north, with a wide internal bank, which survived, to the height of a metre with some evidence of a revetment. The ditch had a basal deposit of organic

rich clay soils, with finds of Iron Age pottery and a complete

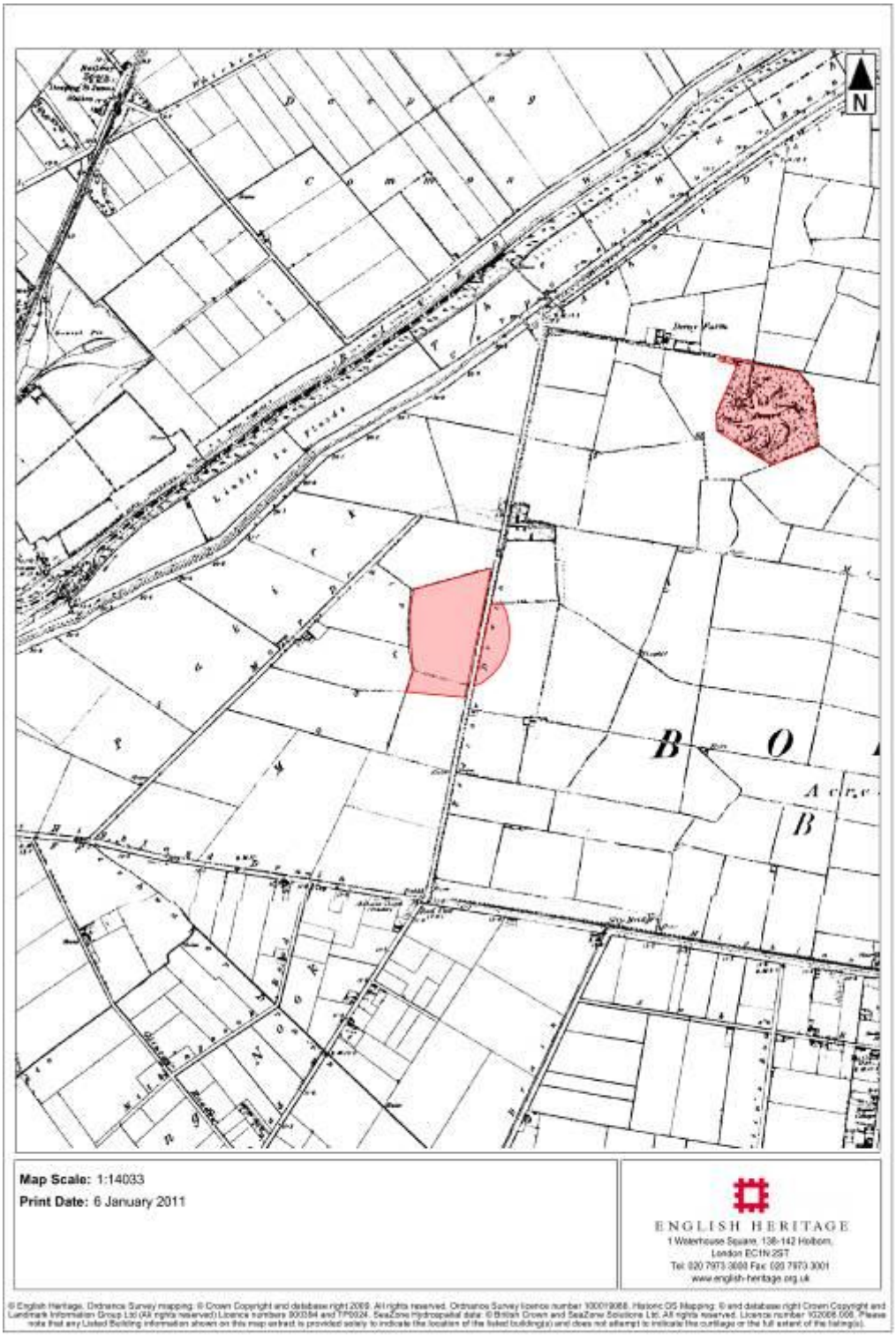

Figure 6.5 Borough Fen Scheduled area, shown in red, over historical maps c. 1887 (English Heritage). The earthworks are not recorded. Note also the decoy to the north.

horse skull. Several smaller features were recorded across the interior suggesting activity in the form of pits and postholes. A similar sized ditch sequence was recorded to the south. The section was also extended to assess the outer bank on the southern side, which proved to be smaller and shallower than the inner ditches (*ibid*). Surviving wooden posts have also been noted, although these were not recorded in any detail (see RCHME 1994, and the HER records). The pottery assemblage and a radiocarbon date of 2090 ±70 BP for the occupation layers has given a middle Iron Age date range (3rd to 2nd centuries cal BC) for its main period of use (Malim and McKenna 1994: 58).

The sequence of development suggests that the interior of the site was relatively undisturbed and that the site had a simple chronology (see Table 6.1 below). The earliest detectable activity took place prior to the development of the site, when the land was used as pasture. Under these conditions a palaeosol developed and was preserved in the interior of the site by later activity. This phase is also associated with occasional pits, showing the impact of human activity. The second phase of activity was the construction of the monument, with the ditches seen to have been cut through and truncating the palaeosol. This phase was dated to the middle Iron Age by the pottery assemblage, a later confirmed by radiocarbon dates. It appears that following this phase, the site was abandoned or its meaning and function changed. The well-preserved stratigraphy showed that these middle Iron Age deposits had become mixed and disturbed and much of the pottery fragments were heavily abraded and showed signs of wear. This was interpreted as activity that took place in the later Iron Age, when the interior was ploughed and used for arable cultivation. A thick alluvial layer overtopped the entire site, effectively sealing all the earlier deposits in place. This event is thought to have happened sometime in the Roman period.

Phase	**Activity**	**Date**	**Evidence**
1	Pre-construction, pastoral activity	Late Bronze Age? – but Pre dating the middle Iron Age	Buried soil
2	Construction of Earthwork	Middle Iron Age	Pottery, radiocarbon dated sequence
3	Ploughing of monument	Later Iron Age	Mixed soils and abraded

	interior		pottery
4	Final abandonment and flood event	Roman period	Thick alluvial soil seals interior

Table 6.1 A summary of the interpretation of phasing from Borough Fen, after Malim and McKenna 1984: 60; French and Pryor 1993

6.4 Palaeoenvironments and the history of palaeoenvironmental analysis

Although it is used as the name for the monument, Borough Fen is actually a whole landscape, and it is one of many Fenland landscapes which have considerable palaeoenvironmental potential. Research on palaeoenvironmental material from neighbouring basins allows informed analysis of the Holocene development of the Fenlands as a whole, and when considered together they combine to create an unparalleled detailed resource (see Waller 1994). The palaeoenvironmental data and survey information for this area is comprehensively presented in reports from the Fenlands Survey (Hall 1987 26-8 and French and Pryor 1993 68-73). A fuller overview of the palaeoenvironmental history of the Fenlands as a whole was also presented by Waller (1994: 221). Subsequently, much of this work has been developed and summarised (e.g. Hall and Coles 1994). The palaeoenvironmental information presented by those reports is summarised here.

Borough Fen is part of the north draining catchments of the River Welland, and forms a small embayment on the western edge of the fens. Gravels are found to the west, with glacial till to the south and Oxford clays underlying the majority of the embayment, and which forms a shallow basin. By the Neolithic period a fen-type wetland had begun to form in the lower lying parts of the basin. This was associated with a dendritic channel system (currently visible in the landscape as ‘roddons’) which drained the basin and flowed out to the north. The roddons are visible on aerial photographs, with the lighter alluvial fill of the roddon contrasting with the surrounding darker fen peat. By the later Neolithic the landscape had been partly inundated by marine alluvium and then peat began to reform widely across the basin by the Early to Middle Bronze Age. This peat continued to grow and expand from the Bronze Age onwards, reducing the amount of land available for settlement on

the western, eastern and southern edges of the fen. This continued throughout the Iron Age and Roman periods, with only the area around the ringwork remaining extant in this period. Buried Bronze Age burial mounds and field systems were also identified during the Fenland Survey attesting to the spread of the peats. Excavations at the Borough Fen earthwork have also revealed further inundation during the Roman period, with marine alluvial deposits which sealed the Iron Age material within the forts interior (French and Pryor 1993: 68-73). Peat growth was widespread across the fens until the medieval period when the drainage activities and reclamation began. However, the water table, and wetland expansion in the area were considered to have reached their maximum during the Iron Age (Hall and Coles 1994: 92)

6.5 History of archaeological management (see Figures 6.1 to 6.4)

Traditionally this area of land was part of the medieval common grazing lands of the Soke of Peterborough (Hall and Coles 1994 138). By the 18th century however, the area had already been reclaimed. Dugdale's map of 1772, for example, shows the area of the Bedford Levels, which includes Peakirk Moor and Borough Fen, to have already been extensively drained (reproduced in Hall and Coles 1994: 149). The reclamation is likely have started in the medieval period and the river Welland, situated less than a kilometre to the north of the site, was already known to have been canalised by this time (Hall and Coles 1994: 136).The cartographic evidence from the 19th century onwards shows that the area was criss-crossed by an extensive drainage network, which operates for the fen as a whole. Moor Drain, for example, took water from Peakirk Moor and the western side of the monument site to the river, and the Borough Fen drains took the water from the land to the east of the monument northwards to the Welland washes (See Figure 6.2). During reclamation the site was also cut by Decoy Road. As the earthworks effectively sit atop a slightly raised area of the underlying glacial deposits, it is likely that this rise formed a more convenient and stable platform on which to build the road. The site, unlike the decoy to the north, does not appear as an earthwork or noted antiquity on any of the early Ordnance Survey maps including the old series c. 1824, and the county map 1: 2500

and 6” series dated 1887 (see Figure 6.3) and 1899 respectively. It does not appear on the OS mapping until the post-war era.

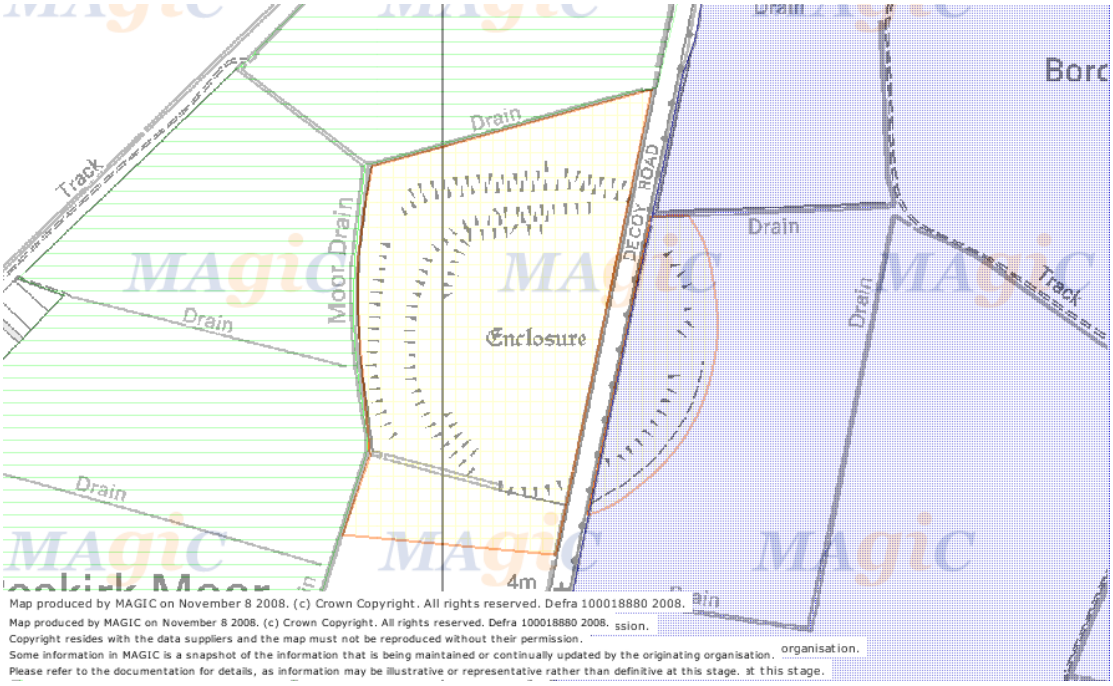

Figure 6.6 Borough Fen (North to the top). Current areas of active management (generated in Nov 2008 from www.magic.gov.uk) [Key: Orange = Scheduled Monument, Blue = Countryside Stewardship, Green = Higher Level Scheme]

Against the long-term general background changes caused by drainage and reclamation in the fens, the last 50 years has been marked by more rapid changes to the agricultural regime. Intensification, which is a familiar picture for much of East Anglia, has taken place in the area immediately surrounding the ringwork, and arable agriculture now predominates. The majority of the site itself has, however, been maintained under pasture, and is grazed. This part of the site is now likely to be considered as permanent pasture. Permanent pasture has protected status under Natural England and DEFRA guidelines. In order to plough an area of permanent pasture requires specific permission and an Environmental Impact Assessment (EIA) must be undertaken. This is partly to encourage the protection of pasture in areas of the county dominated by arable, and partly

because of the conservation benefits provided as valuable habitat. In this case it also protects the earthwork. The bulk of the earthwork is, however, not under any agricultural agreement (see Figure 6.4). A Section 17 management agreement was therefore arranged in 1986 between the owner and English Heritage to continue to protect an area of the monument (English Heritage Unpublished Reports). Some shallow harrowing and burning of grass was allowed periodically, although these practices are not currently favoured. The pasture is also protected as the ploughing of long-term and permanent pasture is not encouraged. Although this and the Section17 agreement provide a relative safeguard for the main part of the earthworks, the current management is essentially passive. The earthwork area has had relatively little active site management to benefit the archaeological resource specifically, and no specific baseline study was completed until the Heritage Management of England's Wetlands (HMEW) produced a management plan in 2002.

By contrast, the heavily ploughed eastern half of the monument is in a different ownership. An early class consent which allowed ploughing on archaeological monuments was in operation for this part of the monument, until 1993 when the area was also brought into a Section 17 agreement by the County Council under the Cambridgeshire Monuments Management Programme. This agreement, funded by English Heritage, was able to target sites in the county with the aim of seeking an improvement in condition. It was also able to pay grants to landowners to aid this improvement.

This part of the site's area is also subject to one of the older type Countryside Stewardship (CS) agreements, which was entered into in 2004. These agreements typically last for ten years and, although the details of this agreement are confidential between the farmer and DEFRA, it is centred on payments for conservation-sensitive farming. It is apparent from aerial photographs presented on the Peterborough City Council website (http://hawkeye.peterborough.gov.uk/hawkeye) that this has included a payment for the earthwork area. The earlier set of photographs (taken in the early 1990s) shows the site under arable cultivation, but by 2005 on the later set of photographs it is in pasture. The CS agreement took over from the Section 17 agreement and payment is made to maintain the site under

pasture. As discussed in Chapter 3, Countryside Stewardship has now been replaced nationally with the Entry and Higher Stewardship Schemes (ELS and HLS), although all existing CS schemes are likely to continue till full term. This site will therefore remain protected until 2014.

Perhaps the most damaging activity for a site with such a wealth of organic potential is more hidden. The drainage and abstraction of water here, as in many Fenland areas, has seen peat wastage and the land surface shrinking and lowered over time. The ringwork itself sits a little above the fen on an area of natural deposits; however the site and its organic finds are still vulnerable to desiccation and drying out. Although the landscape around the earthwork is likely to hold further wet artefacts as well as proxy indices in the peat deposits which relate to the site, we do not yet fully understand how valuable these are

6.6 Implications for management

A management plan was developed for the site as part of the HMEW project (see Fletcher 2003). In the plan the main implications for management were broadly considered to be:

Access, boundaries and site ownership, and maintenance of drainage

- The site is privately owned by two or more landowners/farmers, it is divided and one half is managed grassland the other is under arable cultivation.
- Site access is controlled and there is currently no public access provision or interpretation.
- It is likely that some archaeological deposits may also survive under Decoy Road, which is a public highway. The maintenance of the road, and the drainage requirements are controlled by the Highways Department.
- The drainage of the site and the wider fen, and therefore the water table is controlled. In 2003 this was under the control of Internal Drainage Board (IDB).
- Water abstraction in the area is controlled by the Environment Agency.

Conflict of interest

- Put against the needs of the monuments and the designation, are the requirements of the land owners and their farming regime; this includes historic class consent to plough at least part of the monument.
- The grant requirements for the Countryside Stewardship and the High Level Scheme.
- Maintenance of the public highway.
- Maintenance of land drainage both alongside the road and across the wider levels.

Fragility of resource

- The importance of material recovered from wetland archaeological sites and from wet contexts has been proven to be of considerable value in aiding our understanding of material culture and of past environments, perhaps more so than Iron Age settlement sites from other (dry) landscapes. Research at other Iron Age wetland sites, e.g. Sutton Common, Fiskerton, or the Meare Villages for example have shown what can survive in the way of Iron Age finds. This can include both waterlogged organic artefacts and deposits. The potential for the recovery of such material and its value as archaeology is therefore considered to be high.
- The work from other sites has also shown that this resource is very sensitive and fragile, in particular periods of sustained drainage and the effects of prolonged agricultural activity can severely damage a site. This change is irreversible, therefore the long-term survival of the organic archaeology may not be guaranteed.
- The degrading activity at this site is likely to be both ongoing drainage and ground water abstraction, which leads to de-watering, and desiccation of deposits. Peaty soils under plough will then be vulnerable to wind erosion, whilst soils under pasture will desiccate *in situ.*

- Other factors to be considered are the effects of ground water contamination, through agricultural run off, and chemical contamination from fertilisers and pesticides. These may be contributing to the desiccation.

Knowledge and research

- This site has been under-researched. No systematic excavation has been undertaken and no base line date exists for the site in terms of an assessment of preservation or water table modelling.
- The focus of the Fenland Project was broad and this and subsequent small-scale excavation has demonstrated the potential of the site and the local area for this kind of research.
- There is no public access to the site, placing limitations on both public understanding and research.
- The site is not an isolated feature, but part of a larger archaeological and cultural landscape, some of which still remains buried beneath peat deposits surrounding the site

Area of concern	Issue
Access and ownership	Multiple owners, no overall control, and no access
Conflicting interests	Archaeological preservation versus farming and conservation, drainage, access/road maintenance
Fragility	Wet artefacts and deposits affected by dewatering, drainage and farming practices
Research/knowledge	No systematic baseline survey of archaeological resource and no understanding/monitoring of scale of desiccation/de-watering

Table 6.2 Showing summary of management issues

6.7 Research Agendas and Frameworks

There is no overarching agenda or framework specific to wetlands, and sites like this need to be assessed through other related documentation. In this case the relevant documents are

- English Heritage's Strategy for Wetlands (Olivier and Van de Noort 2002).

- East Anglian Regional Research Frameworks (Glazebrook 1997; Brown and Glazebrook 2000), in particular the Iron Age sections by Bryant (1997; 2000).

NB At the time of writing the documents are under review (c 2009/2010), and the drafts that have been circulated to curators in the east of England region suggest that the study of wetlands may have a more substantial profile in the new documents. For the thesis, the published documentation has been used.

Borough Fen and the Strategy for Wetlands

The strategy for wetlands is for the most part an overarching document without specific reference points for dealing with individual sites. There are four main principles (Olivier and Van de Noort 2002:2). These promote:

- Better management though practical conservation mechanisms
- Better research
- Better outreach
- The promotion of wetlands policy in the work of local authorities, national agencies and intergovernmental bodies.

Application of all of these, particularly the first three, would benefit this site in the long term. The site is currently managed only in a passive manner and to change this to active management, which looks holistically at the site and focuses attention on the archaeological resource and the wet component, would be beneficial. Better research would also allow a full understanding of the quality of the archaeology, its academic potential and the preservation conditions. Outreach could also be achieved by making the site accessible to the public. The fourth point is more difficult to achieve. As the MAREW study has shown, it is not clear that all curators fully understanding the issues relating to the management of wetland archaeology, and how this site is understood locally is a case in point. The Iron Age section of the regional research frameworks, for example, considers it to be a hillfort (Bryant 1997:

29). This is perhaps in spite of the extensive survey and analysis of the site undertaken by the Fenland Project (e.g. Hall and Coles 1994:103).

One key phrase in the Strategy for Wetlands was a commitment to the development of '….programmes of survey and excavation as an essential pre-condition to the development of successful management practices and promoting applied research to underpin good management of wetlands and to inform future policy development' (Olivier and Van de Noort 2002). This in essence looks towards the development of baseline studies for important sites, underpinned by good quality research, which in turn provides for the development of specific prescriptions on a site by site basis. Borough Fen is one of the sites that would benefit from this approach.

Borough Fen and the Heritage Management of England's Wetlands Project

Under the Implementation section of the Strategy, provision was made for the development of '…an inventory of the most important wetland monuments in England, and design and implement, where possible, site-specific conservation management strategies' (*idem*). This became the HMEW project, for which the ringwork at Borough Fen was identified for inclusion. The project recognised that this was a known site; that it had a demonstrable wet potential and had enough previous analysis and excavation to provide a specific level of archaeological information. It could also be demonstrated that there was a wet component. The Borough Fen ringwork was therefore placed on the list of wetland 'type' sites. Furthermore, in meeting the criteria for this list it meant that Borough Fen was considered to be amongst the best wet archaeological sites in England. It was considered likely that the site would have a good preservation environment, and would have preserved organic artefacts, and associated palaeoenvironmental deposits. The project also recommended that English Heritage should consider the Borough Fen ringwork as a 'beacon' site, in line with the Strategy for Wetlands. The strategy defines a beacon site as one where it is possible to 'Explore the potential, and develop the mechanisms, for some of these sites to be used as a pilot platform for interagency co-operation ('beacon sites')' (*idem*). This

means that this site is considered valuable archaeologically and has enough surviving elements to warrant further attention. It also has the potential for themes that extend beyond the archaeological sphere, towards other agendas such as those of the Natural Environment. This would also seek to look at the issues, threats and barriers to sustainable preservation, and explore the possibility that this site could be preserved. Furthermore it needs to consider what would need to be done to achieve this. Under HMEW the first step was to develop and write and publish a management plan (Fletcher 2003).

Borough Fen and the Regional Framework

Borough Fen is on the on the border of Peterborough and Cambridgeshire, and falls within the Peterborough City Council jurisdiction. It is therefore within the area covered by the East of England framework. As previously mentioned, this framework does not have a specific wetland agenda or theme; therefore this site can only be assessed in a period or settlement context. The framework is in two parts, firstly a resource assessment and secondly an agenda and strategy document (Glazebrook 1997; Brown and Glazebrook 2000). Both have sections specific to the Iron Age (Bryant 1997; 2000).

These documents recognise that the Iron Age in East Anglia is poorly understood, and that in terms of specific period based research, the '…Iron Age of East Anglia has historically received generally less attention than other regions in southern England especially compared to Wessex and the Thames valley' Bryant (2000: 14). Bryant also recognised that in East Anglia the key gaps in knowledge were in understanding Iron Age chronologies, economy and agriculture, industry, settlement distribution and also in the analysis and dating of pottery assemblages. The only place for wetland archaeology in the East of England framework is where it recognises that palaeoecology can play a role in understanding Iron Age economy and agriculture. In particular it calls for more '…analysis of dated sedimentary sequences such as alluvium, peats, and palaeochannel fills, which are immediately adjacent to known settlement sites' and more '…dated buried soils beneath dykes and other earthworks' (*Ibid*: 16). It is clear from the previous work at the ringwork, including the limited excavations and the Fenlands Project, and also from the site's location

within the Borough Fen basin, that it has a proven wetland component. Although wetland archaeological research is not specifically mentioned, this site still is a primary candidate to inform the research that the framework sets out to address. In particular there are for example known on-site deposits, which include the buried soils, situated beneath both the surviving earthworks and the interior deposits. It is also situated in a primary wetland with peat sequences from the fields surrounding the site and it also has secondary wetland deposits such as ditch fills.

Putting the wetland credentials to one side for a minute, and assessing it as an archaeological earthwork monument in its own right, it is also clear that this can be seen as a valuable resource which contributes towards the research identified in the East of England frameworks, in particular the Iron Age criteria. The monument has significant potential to provide evidence to answer the themes and the questions posed by the document. Monuments such as this are very scarce in East Anglia, with only a handful of such sites known across the counties of Norfolk, Suffolk and Cambridgeshire (see Fletcher 2007: 170). Moving even further afield, multi-vallate fort-type monuments are still infrequently found in this region (Bryant 1997: 24). This site, according to the limited work that has been undertaken has both a finds assemblage which includes pottery and an interesting sedimentary sequence with buried soils and other related palaeoenvironmental sequences. It has the potential to inform on the development of economy and agriculture in the Iron Age period, and in refining the pottery and artefact chronologies, particularly when placed alongside the dating of buried soils. Wider analysis of the site in its context, such as that provided by the Fenland Project also provides a link towards understanding settlement development in the region: it informs patterns of settlement and distribution and also the form and function of individual monuments.

It is therefore a site with considerable research potential which conforms to those needs established by the regional research frameworks. A summary of how the Borough Fen ringwork fits into the wetland strategy and the regional research frameworks are presented in Table 6.3 below.

Document	Sites priority as	Potential of the site - key elements

	defined by each strategy	
Wetland strategy	High	HMEW List 'A' type site, potential EH beacon site
Regional Framework	High	Rare IA earthwork, important information on period for settlement patterns, dating and refining chronologies. Good on-site sequences, inc. buried soils, as well as localised wetland deposits from the site. Significant fen deposits located adjacent. Finds assemblage include pottery and other artefacts

Table 6.3 A summary of priorities as determined by the relevant research agendas

6.8 Monuments Protection Programme scoring and value

Borough Fen ringwork with its old county based Scheduled Monument number PE 222 was not analysed by the MPP. The table below (Table 6.4) has therefore been created using the MPP basic criteria, such as period and rarity. The assessment and score are based on information gained during the creation of this case study, and the score is demonstrated in a way that is comparable to those of the cultural value analysis below. The MPP scoring in this instance has also been used to evaluate how the wetland specific components such as location, setting, and potential might affect the outcome. This is because it is perfectly possible to look at the monument without ever seeing its wet potential; however this knowledge may heighten the site's value.

MPP Criteria	Assessment	Score	Analysis
Period	High	3	The number of known Iron Age sites in the region is low, therefore for its period it is an important site. Iron Age wetland sites are also uncommon
Rarity	High	3	Large multi-vallate Iron Age settlement sites in the east of England are rare, with only a handful of sites known. Its wetland setting and wet components suggest this site may also be a marsh fort, which are also uncommon monuments types. Sites which have a demonstrable wet component are also rare
Document-ation	Medium	2	Minimal investigation and published reportage. There is enough to determine character and period. Good aerial photographs, cartography and map evidence survives. Because the site has never been fully investigated, it also means the majority of the deposits remain undisturbed. So

			the potential is still high.
Group Value	Medium	2	A single monument without local comparison, however it appears from aerial photographs that other related field systems and possible sites lie in the vicinity, so it does appear to exist with in a contemporary landscape
Survival/ Condition	Medium	2	Excellent and unusual survival of earthworks, in a predominantly arable landscape Few other earthwork sites of the period known to survive. Site is also known to contain surviving artefacts. The condition of earthworks could however be better with one area flattened, and outlying earthworks also compromised, which lowers the score Survival of organic artefacts and palaeo-environmental deposits is also known to exist on and around the site, which is good. The condition and survival of the organic material is however, difficult to establish. This part of the site may be heavily compromised
Fragility/ Vulnerability	High	3	The wetland deposits are very fragile, as are the larger organic artefacts. The site as a whole is vulnerable; it is under pressure from arable agriculture, from decay and from the factors that affect wet archaeological sites such as drainage, de-watering and desiccation
Potential	High	3	The potential of the site in information terms is huge, the scarcity of lowland Iron Age sites and the wet deposits make this one of considerable value

Totals	Low = 0 Medium = 3 High = 4	18/21

Table 6.4 MPP Criteria and scoring

In short, it is clearly an important monument and warrants its scheduled status. If this process is understood as an internal analysis, i.e. one which is based only on comparison with other archaeological sites, then it clearly still scores highly. In rarity and period terms it is exceptional and there are no sites like it in the fens. It is a site that could be considered under the term ‘marsh fort’, but again this is also an uncommon monument in the British archaeological record. It survives well as an earthwork, and in an arable context it is also vulnerable to damage and under pressure from arable land use. Furthermore, because it is a site in a wetland it is even more fragile and vulnerable, and the loss of the resource would be more harmful. The wet context means that the site must be considered as having a higher potential,

particularly because of the range and scope of the information and evidence present in the organic deposits.

In this case environmental factors increase the site's importance; however the earthworks and the period/rarity aspects alone would still make it a valuable and nationally important site, even if it was not a wetland site.

6.9 Assessment of cultural value

As discussed in Chapter 4, the analysis of archaeological sites for their Cultural Value is not regularly undertaken, however, archaeological sites have the potential to score highly or when viewed with the same criteria. If MPP is seen as internal for archaeological type of analysis, then Cultural Value is an external type of analysis, or at the least, a comparable examination of the value of archaeology against other item of cultural capital. An analysis of the Borough Fen ringwork site is shown here (see Table 6.5 below) against the Cultural Value criteria outlined and discussed in Chapter 4. Similar to the MPP system (see Table 4 above) these are given a high, medium or low score, to keep comparison simple.

Value Type	**Assess-ment**	**Score**	**Analysis**
Aesthetic	Low	1	Not a greatly appealing site in aesthetic terms, the visual impact of a site like this is muted by the flat nature of the fen, and by the fact that the site is surrounded by high hedges and deep drainage which obscures it. In addition there is no access, so the site is difficult to see on the ground. The best way to see it is from the air. This is unlike similar period hillfort monuments, which often have an all round visual effect, or can be seen as an integral part of a prominent view
Authenticity	High	3	An original monument in good condition with many surviving and original features, although the value here is not specifically dependant upon the wet resource, but also on surviving above ground features such as the earthworks. The site has certain completeness and therefore retains its integrity
Bequest	High	3	Information value here is high therefore legacy and bequest values are also strong. This represents the information about the past that this site can inform for the future. As it is relatively intact and preserved, improved management and preservation of this site would provide an excellent example of a site with intergenerational equity

			Even without its wet potential the value of the material culture is also high. Wet potential adds a new dimension in terms of the potential for valuable cultural material
Communal	Medium	2	This site represents communal values and is illustrative of a shared effort; this site can therefore link together ideas of collective spirit and enterprise. The site is however not well known and is isolated and remote
Cultural	Medium	2	Although this has come to mean the overarching value, in the sense of the publication from which this indicator was derived this value was thought to be how a site engenders its sense of communal and public worth. The Borough Fen earthwork is site in private ownership but can still be publically understood
Economic/ Market	Low	1	Land value in this arable dominated landscape is high, so there is pressure on the land held as the monument. This is reflected as pressure on archaeological sites from ploughing. The economic potential of this land if under arable is high. The site does however score highly as an asset on other cultural value indices therefore as a well preserved site with strong bequest and informational value the balance should be settled in favour of the preservation of the site. It is eligible for Environmental Stewardship and has already demonstrated capacity to attract Section17 and Countryside Stewardship funds. It does however have little or no income generation capacity as a monument at present. It is not fully accessible, it is held under different ownership and is a not in a naturally attractive destination
Educational/ Academic	High	3	Can be understood, and is a resource or store of material culture which could form part of the human story. Preservation is good, and the value here is considered high
Emotional	Low	1	This site does not provoke a strong emotional response; however it's a moderately well known monument locally. It has also survived for a long time as an earthwork; its loss or destruction would be saddening from an archaeological perspective and is largely unnecessary
Evidential	High	3	A store of both artefactual and environmental data. It has power of place and cultural associations. The wet component adds a new dimension to the evidence associated with the site
Existence	High	3	See Emotional (above) Loss of a site which has survived for so long would be saddening. Although arable pressure is always there, whilst environmental stewardship schemes exist there is currently no excuse for this site to be lost. Its inheritance value is good One interesting point is that the wet component here is important to the site's informational value but it is currently unquantified, therefore if that is lost does it affect the existence value? In this

			case the answer is probably no as its other assets i.e. the earthwork, the fort area and the cultural material remains are still significant in their own right
Historical	High	3	An important site and set of remains, which as discussed have integrity and strong evidential and information values. Identified in a local, regionally and nationally context as important
Informational	High	3	On site it has archaeological, palaeoenvironmental and geoarchaeological assets. It is also a surviving earthwork and has group value with other monuments in the landscape. There are both palaeoenvironmental sequences on and immediately off site, giving linkages from the site to the immediate landscape. It scores highly on many levels in informational terms. These are for example the site's archaeological and historical value, its place as part of a wider fenland landscape, and its links to Iron Age culture. The site can help in informing settlement and material cultural debates, as well as providing dateable material
Resource	High	3	Highly valuable store of information, including potential for wet preserved material
Recreational	Low	1	Has potential as a site for public access but is currently in private hands
Social/ Community	High	3	See communal (above). The site is also a link with the past and with a different type of landscape – its links to the fen and to the pre drainage wetland landscape are also important
Spiritual	Low	1	Much is made of spiritual value for some sites, particularly megalithic structures - this site is perhaps perceived as more prosaic and has less spiritual appeal
Symbolic	Medium	2	Whilst it may not be spiritual (above) it is perhaps more symbolic. This is the recognisable Iron Age association. It could therefore be understood as symbolic of its period, with a recognisable form and function

Totals	Low = 5 Medium = 3 High = 9	38/51

Table 6.5 A summary of Cultural Value indices

Interestingly when the results are analysed, they suggest that Borough Fen ringwork should be considered as a highly valuable cultural asset, with great authentic and evidential wealth. The wet archaeological component does, however, not add much additional cultural value to the site. This is different to the MPP evaluation system however, where being a wetland site

added considerably to the site's score for the specified criteria. The exception in the Cultural Value analysis is with regards to the category of informational value. Here, the wet component, the preserved organic archaeology and a site context which is part of the fenland landscape adds significantly to the information component of the analysis. Wetlands sites do have the potential to increase knowledge of the past perhaps more than other types of archaeological sites, particularly where elements of material culture are preserved, that are often not found on other types of excavation. The informational value of wet deposits is likely, or has the potential, to be higher. This site presently has a lower score low in terms looking at aesthetics, emotions, spirituality and economics, whereas other archaeological sites may have more to offer in these areas.

6.10 Assessment of Economic value

The analysis in this section is presented in line with the Economic Value diagram presented in Chapter 5 which depicted the cost scenario for Archaeological Preservation (see Figure 5.3). Two tables are presented below. The first outlines the Economic inputs, positive values and current annual income (see Table 6.6). The second presents the negative costs associated with management.

Economic Inputs	**+ ve economic values**	**Annual income**
Cultural Value	High scores for archaeological and cultural values	n/a
Land value	Area of high arable production value	n/a
Earning potential	No current visitor potential for earnings from the archaeology	n/a
Funding and grants	**Environmental Stewardship and S.17** 3.4 ha @ £500 p/ha for reversion under option HD 7 (see Table 3.3) 6 ha @ £130 for maintenance of pasture under option HK15 (see Table 3.3) Total 10 year agreement value - Total	 =£1,700 =£780 £2,480 £24,800

Table 6.6 A summary of Economic Inputs

Management Costs	- ve economic values	Costs
Assessment of value and significance	Assessment of significance using studies of previous work Some research already exists	n/a
Development of Management Plan	Plan completed by HMEW Site requires more research to establish baseline assessment of burial environment and preservation potential	n/a
Repair/restoration	Not determined due to lack of baseline date	n/a
Land purchase	Not currently an option	n/a
Offsetting farming income	Designated so cannot be ploughed	n/a

Table 6.7: A summary of Management Costs

In economic value terms because the site management has been passive, and there are few actual incomes or costs that have been accrued. The research demonstrates that the site has a high overall cultural value, and is protected as a monument under legislation. It currently has no income generation capacity. All research to date has been published and is available so analysis costs of available data are low. Because of the designation and the nature of the permanent pasture the bulk of the site cannot be ploughed. It is however in an area of the country where arable productivity and arable land are valued higher than pasture, in particular because of the productive soils of the fens. The farming pressures here therefore dominate the agenda. Income from management agreements and environmental stewardship are likely to be the main cost factors. The stewardship schemes provide a way of incentivising the protection of the archaeological site, and provide a benefit for the natural environment through the protection of grassland habitat. These can be seen as a positive economic input and a generator of income.

Taking the site from a passive to an active regime would however require considerable cost inputs. The baseline preservation conditions are not known and further detailed analysis would be necessary. This would require an increase in the negative value, and ensure that the costs column of Table 6.7 (above) would become populated.

6.11 Summary

Borough Fen has was carefully chosen as a case study because of the potential it has to compare with the other studies in this work, particularly Sutton Common. Both are Scheduled Monuments, and with similarities in period, form and setting. In many ways however, it is how the sites have been treated and managed in the past that is important within this analysis. In particular, the previous approaches to each of the sites' research and management provide differing experiences of management practice. This evidence will be used to provide the information on which to base the study of sites in the future and to guide research. The analysis presented here therefore represents an understanding of the costs associated with passive management; in particular the mechanisms that currently operate for sites in the rural landscape. It also follows in form the flow chart presented in Chapter 5, which depicted the case study lay out (see Figure 5.1). Because there is a relative lack of overall in-depth analysis, some of the analysis has been based on an understanding of the site's potential.

The site has a high archaeological value. This understanding is derived from the analysis of previous research, placed against criteria provided by the regional and national frameworks. It is clear however that the site has been misunderstood and misinterpreted in the regional literature. The Regional Research Frameworks (see 6.7.3 above) do not place Borough Fen in a low-land Iron Age context but relates it instead to the hillforts of Wessex. The site however score very highly against the MPP criterion (see Table 6.4 above), and it is also a designated monument, so therefore is recognised and protected under legislation.

In terms of the analysis of its Cultural Values it also scores well in a number of areas (see Table 6.5 above), namely in authenticity, evidential, informational and historical value. The good condition of the earthworks and its wet potential make it important for existence, legacy and bequest values. Under both sets of analyses the overall results suggest continued protection of the site and further investigation is warranted. It also became a beacon site in the HMEW project. Being a wet or potentially wet site with deposits of peat and preserved organic artefacts, the site has certain additional values. In particular this aspect gives high historical and informational values from locally derived wetland deposits and fen peat sequences both on and off the site.

These provide an important link between the site and its environment, and provide environmental evidence over time.

It is also a site at which above-ground remains in the form of earthwork banks and ditches are preserved. These ringwork or marsh fort type monuments are rare in a regional and national context and are valued outwith the fact the site has wet deposits. It is likely therefore that it would score well as an item of cultural capital whether it was located in a wet situation or not. For this site, part of the conclusion must be that the potential for wet preservation adds considerably to its archaeological and informational value but because of the importance of the earthwork monument itself, the wet material matters less to its overall cultural value.

In Economic Value terms the designation protects the site from ploughing, but the agricultural agenda dominates. Even in an arable context the management of an archaeological site and an area of pasture can still generate a small income from environmental stewardship. It has been demonstrated that the site is eligible for the scheme and attracts an estimated annual income in the region of £2,480. This is currently the only figure that is relevant to this scenario.

In terms of the site management, over the long-term this has essentially been passive. Legislative protection has been afforded to the site through scheduling, and the bulk of the site (6 ha) has therefore been maintained as pasture, a further area of land (3.4. ha) has been reverted to pasture under the stewardship schemes. A glance at all the surviving earthwork remains would suggest the site is generally in good condition. This however is perhaps to misunderstand the nature of the site and its deposits. Overall then, passive management means that as a monument it has recieved little overall intervention on behalf of the archaeology. This has led to the degradation of the site in real terms. Parts of the earthworks have been ploughed, and intensive arable agriculture surrounds the monument. An informed look at the wetland issues suggests that the preservation of the more sensitive wet components of the site may already have been compromised by the long term drainage regime present around the site. Although wet deposits and artefacts have been recovered during excavations in the 1980s and 90s, there has been no work undertaken in the last 15 years to determine whether

conditions are deteriorating or are stable. As a result, the conflicts with the other land management activities in the area, including arable and drainage, mean that the passive regime, whilst protecting the majority of the earthworks, is likely to have meant neglect for the wet deposits.

It still, however, rates highly in Cultural Value terms, which accepts a more holistic view of the site as a significant item of cultural significance or capital. The site is therefore still worthy of protection and the passive management has been able to protect the overall integrity of the site. Some of the rarer elements which provide that extra value in information terms, and are the most valuable archaeologically, may have been lost. A more proactive management regime may have been able to protect the wet component, and the future management of the site would benefit from a more inclusive approach. In particular a management regime where the water table and drainage are included in the plan, and where a proper research strategy is in place to provide baseline data to underpin the site management. As no information is available currently this cannot be costed, but it is likely to add considerably to the management costs, as this would require a full programme of research to identify baseline conditions, and the development of a strategy for the future.

Chapter 7 Archaeological sites in wetlands Case Study 2: Sutton Common, multi-vallate earthwork or 'Marsh Fort', near Askern, South Yorkshire.

7.1 Introduction

Sutton Common is arguably England's best surviving example of a lowland fort or 'marsh fort', and has defined a new genre of sites. Because of the unprecedented scale of recent fieldwork it is also one of the best studied wet archaeological sites in England. Sutton Common is also the site from which the initial questions, ideas and objectives regarding this thesis were first articulated. Like Borough Fen, Sutton Common was also studied as part of the MAREW and HMEW projects between 2000 and 2003. A management plan was created during this work. This case study is based upon my work undertaken as part of these earlier studies. As discussed in the Borough Fen case study (see Chapter 6), it is also important to have similar components within the case studies to enable comparative examination, particularly when looking at the way they are managed. Although the Borough Fen site is situated in the fens it is a parallel example in terms of situation, aspect and landscape. Both sites have comparable archaeological attributes, against which their analysis can be judged: and both are considered to date from a similar period, have similarities in setting, form, and possibly in function (see Fletcher 2007).

Sutton Common, unlike Borough Fen, is well known in terms of research. A synthesis of this work provides a baseline for a resource assessment of the site. Early work was undertaken by antiquarian excavators, and the site has also been extensively investigated in the modern era. In contrast, apart from antiquarian work Borough Fen was only studied briefly during the Fenlands Survey and Management Project (e.g. Malim and Mckenna 1984; French and Pryor 1993). Although there has been much more work at Sutton Common overall, some comparisons can be drawn between the work of the Fenlands Survey at Borough Fen and the Humber Wetlands Project work at Sutton Common (Hall 1987; Van de Noort and Ellis 1997). The Sutton Common work developed beyond the survey and assessment remit, and became a major stand-alone research project. Extensive excavations were conducted with a view to characterising the site, and providing scope for

its management. Sutton Common therefore represents a significant step forward in understanding and managing wetland sites.

One of the difficult issues with Sutton Common as a site was how to define it, a problem shared with the Borough Fen ringwork. Archaeological value is often assisted by, or is partly based on, resource analysis undertaken by category or period. Sites are characterised by taking the informational value of a known example and applying these values to an unknown one. This is particularly relevant for the Monuments Protection Programme, as the mechanism for analysis was firstly an assessment and definition of monument types, which was then used to rank sites of that type. Other multi-vallate earthworks which date to the Iron Age are the classic Iron Age hillforts, and these are often the key points of reference, in both a regional and a national context (e.g. Martin 1999: 40**;** Bryant 1997: 29). The recent excavation and subsequent publication clarifies that Sutton Common is an Iron Age site, but also recognises that it is very different to a hillfort. The term 'marsh fort' has been considered as the preferred choice in this context (see Van de Noort *et al* 2007). This study also has helped to redress the balance in the understanding of multi-vallate Iron Age sites, which previously has been based on hillfort examples from the south west.

This redefinition did not happen until after the MPP had ended, therefore these sites were seen in that study as single monuments and were often looked at in isolation, without a full appraisal of context or importance. For Borough Fen and Sutton Common, no MPP assessment or scoring was undertaken.

The archaeological resource provided by Sutton Common can be summarised in four main areas.

- The monument and its archaeology, including the excavation data, which provides direct analysis of the surviving wetland components;
- The 'on' and 'off' site palaeoenvironmental and geoarchaeological sequences;
- Extensive specialist analysis including water table modelling and soil geochemistry;

- An active management approach, designed to restore the wet nature of the site, but monitored in order to provide data for the future use of the techniques on other sites and for the analysis of its effect.

7.2 The site context

The objective in this section is to provide information about the site's situation including information relating to the background history, and a description of the physical characteristics of the site.

Background (see Figure 7.1)

The site is currently owned and managed by Carstairs Countryside Trust (CCT), who purchased the site in 1997, with support from the Heritage Lottery Fund and English Heritage (see Smith 2004: 4). Although open area 'strip and record' excavations were conducted in 2002 and 2003, the work was designed to retain significant components of the archaeology, and an estimated 90% of the site remains intact. This protects the site's status as a Scheduled Monument (SM Number SY291), and means that it both retains its archaeological integrity, and provides an archive for future work. Since its purchase in 1997, land management has involved reversion of the site from arable to pasture, in particular to a wet-grazing habitat. This was achieved through a specific programme of water-level management, involving a reversal of the land drainage and a gradual re-wetting the site. This was underpinned by a programme of research during the re-wetting that studied and monitored the water table, and analysed the soil chemistry in relation to the known archaeological resource (Cheetham 2007: 26).

Like the first case study, the earthworks have been named after the land on which they are situated and the name of the land has become synonymous with the name of the site. Sutton Common lies in the parish of Sutton, to the south of the mining town of Askern, near Doncaster in South Yorkshire (see Figure 7.1 above). It is an area of former common land, with map analysis showing that unlike the surrounding fields, this area had not been enclosed by 1858 and was therefore still held in common longer than other parts of the parish (Chapman 2007a: 4).

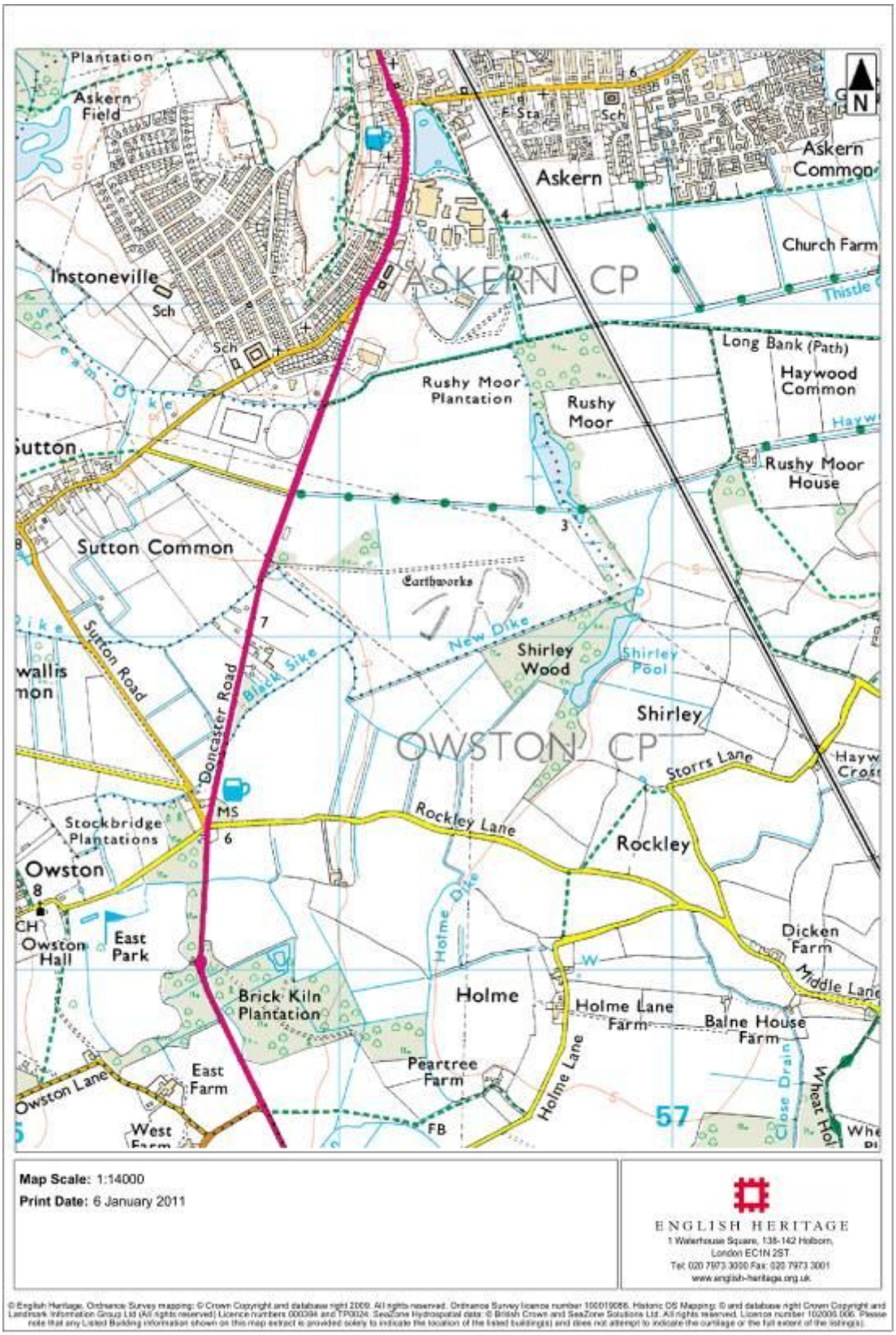

Figure 7.3 Sutton Common and location of earthworks (English Heritage)

The earthwork was first recorded as 'Crook Hills' (see Figure 7.2) and was considered to be a Roman-period camp, and only later was it identified as Iron Age in date. The site had been the focus of archaeological investigation for over 100 years, although much of the information from these earlier explorations has been lost. The best recorded work was carried out in the 1930s under the direction of a local amateur archaeologist C. E. Whiting (Whiting 1936). The next phase of work was undertaken in the 1980s and 90s, by South Yorkshire Archaeology Unit and the University of Sheffield. This work is summarised by Mike Parker Pearson and Bob Sydes (1997). The Humber Wetlands Project resurveyed the site in 1996, and the findings were published as part of the Humberhead Levels volume (Head *et al* 1997: 233). From this work followed a series of evaluations in 1998 and 1999 and then a large set-piece, open area excavation undertaken by the Universities of Exeter and Hull in 2002 and 2003. This work was published in 2007 (see Van de Noort *et al*). No further work is planned.

Much of the impetus for the recent work was provided by the partial destruction of the site in 1980 when the upstanding earthworks were flattened by means of a bulldozer, and the field drainage that was subsequently installed. Furthermore, it has been estimated that the new drainage system on the site lowered the local water table by up to two meters (Chapman 2007a: 6). Full destruction of the earthworks was only halted by the intervention of two members of staff from the local museum, who happened to be passing by. The first archaeology work that was undertaken in response to this activity was by a group based in Sheffield University and began in 1987. Following the damage, the strategy was designed to provide a preservation assessment of the site, and this included a survey, geoarchaeological work, and trenching. The conclusion drawn from this work was that the drainage and the destruction significantly reduced the value of the site, and that it could no long be considered as a wet archaeological site with a good preservation environment (Parker Pearson and Merrony 1993; Parker Pearson and Sydes 1997; Chapman 2007a: 7). The site and its landscape context were further investigated in 1996 as part of the Humber Wetlands Project (Head *et al* 1997: 233).

Following the purchase of the site by CCT in 1997, further evaluation of the large enclosure took place in 1998 and 1999. In 1998, this consisted of trial trenches across the larger of the two enclosures, which showed that contrary to the previous assumption, preserved wooden posts were recovered and parts of an elaborate gateway survived on both the eastern and western sides. The massive *in situ* oak posts identified had, however, become heavily desiccated and much of the valuable information they contained, in particular the potential for obtaining dendrochronological secquenes, could be lost within a number of years. The following year, more internal features were identified, which included postholes with *in-situ* timbers in varying stages of desiccation. The excavations that followed in 2002 and 2003 (see Figures 7.2 and 7.3) continued to focus on the large enclosure and were able to reveal c. 95% of the interior and c. 25% of the defensive structures that surrounded the site, with a 10% sample of discrete features and the defences. A large-scale magnetometer survey of both enclosures and the palaeochannel was also undertaken prior to the 2003 excavations. The smaller enclosure was not subjected to further excavations during 2002 and 2003, in order that as much as possible of the surviving features should be preserved as part of the Scheduling.

From 1997 onwards, and often in tandem with the archaeological investigations, a wider strategy was pursued. This was essentially a baseline study of the site conditions which has fed into a preservation strategy. This wider partnership has become known as the 'Sutton Common Project', it was spearheaded by English Heritage, and involved the Trustees of CCT, in partnership with the then government bodies of English Nature and the Countryside Agency (now Natural England), and the local parishes. The Universities of Exeter and Hull provided archaeological expertise and an academic focus to the archaeological work (see Carstairs 2004: 12). The Project included the acquisition of the land (aided by HLF), wildlife and landscape enhancement, archaeological and palaeoenvironmental evaluations, and engineering work to reverse the drainage regime and raise ground-water levels. The project formed a part of the Countryside Agency's 'Value in Wetness' scheme, and was a land management initiative, which sought to find new, economically viable and environmentally sustainable

approaches to water and land management in the Humberhead Levels (*Ibid*). Collaboration over future public access is still ongoing.

Site description

The site is situated in an area of low-lying former wetlands which, in turn, is part of a much larger area of lowlands which have come to be known as the Humber wetlands (e.g. Van de Noort 2004). The Humberhead Levels are bounded to the west by the north-south aligned limestone ridge which runs to the east of Leeds, and by the rivers which flow eastwards across the plain towards the Humber estuary. To the north of the site are the rivers Aire and Ouse, to the east is the Trent, to the south is the Don, while the site itself sits within the catchment area of the one of the smaller streams leading to the river Went.

The archaeological remains comprises two kidney shaped earthwork enclosures built on separate small sandy islands raised a metre or so above the surrounding wetland. The two enclosures are bisected by a small palaeochannel known as the Hampole Beck, which originally drained northwards towards the river Went. This pattern remained unchanged until the area was drained and enclosed, which introduced the current field pattern and an artificial drainage network across the area. The easternmost of the two enclosures measures 250 by 130 m, and encloses an area of approximately 2.5 hectares. It is now known as the large enclosure, but was formerly called camp 'A' by Whiting and enclosure 'A' after Head *et al* (see (1936 and 1997:233 respectively). It was bulldozed in 1980 and now only survives as soil or cropmarks, although well preserved archaeological sequences were shown to survive in the 2002-3 excavations. It is considered to be a multi-vallate enclosure although the numbers of ditches varies around the monument; the eastern half for example is better defined than the west, with at least two distinct ditches. The western-most or small enclosure is still extant, with a single well preserved bank surviving to over a metre high. It measures approximately 150 by 80 metres and encloses an area of approximately 0.7 hectares. In previous work this was known as camp or enclosure B. Although always known as and enclosure this part of the site is in reality a cross-bank with a series of extra banks and ditches. It appears that it functioned as an

elaborate entrance to the larger enclosure. It was accessed from the dry land via an entrance on the south east which in turn linked to the larger enclosure via a causeway across the Hampole Beck which, in the Iron Age, was a wetland rather than a stream. The large enclosure was served by two entrances, one to the west accessed from the causeway, and a larger grand entrance to the east, although this almost certainly opened straight out onto the wetland edge. A largely symbolic as opposed to a functional use has been interpreted for this entrance (Van de Noort and Chapman 2007:112).

Both enclosures are part of the schedule (under SY291), and this number shows that it was designated under the old English Heritage county numbers system and has not subjected to the MPP reclassification. Therefore no revisions or re-evaluation of the scheduling has been undertaken for this site.

7.3 Archaeology

The site as described above is a multi-vallate earthwork monument, now part of a category of sites known as marsh forts. More commonly associated with hillforts in period and development, a marsh fort however occupies a low-lying and often wetland setting. This is the case for Sutton Common, which after the publication of recent research can be considered as the new type site for the classification of the monument.

In terms of archaeology, not only is Sutton Common multi-vallate, but it is formed from two separate enclosures which were found during the recent evaluation to have been linked together via a causeway. The causeway was built of brushwood with chalk rubble over the top to create a surface, and was flanked with large wooden posts placed at intervals along the sides. It crossed the small wetland that had formed between the natural sand islands on which the fort was built.

Figure 7.2 The large enclosure during excavation in 2002 (Sutton Common Archive, University of Exeter)

Figure 7.3 The large enclosure during excavation in 2003, note the entrance to the lower centre (Sutton Common Archive, University of Exeter)

The large enclosure was fully investigated using a methodology which is often termed ‘strip and record’, or ‘strip and map’. Here a full plan of the site was made during open area excavation, but only a small percentage of the features were excavated. With the majority of the features and ditch fills remaining intact the site is able to retain its scheduled status. This work, presented below, is abridged from recently published work on the site, in particular from the descriptions of the excavation (Chapman and Fletcher 2007a: 71-85; *2007*b: 114-120; 2007c: 151-156).

The earliest human evidence from the site points to occupation of the sand islands on which the enclosures were subsequently built, and in the area surrounding them from the Mesolithic to the Bronze Age. A considerable collection of worked flints was recovered, alongside other stone tools which included tools, axes and arrow heads. These finds were identified both during the Humber Wetlands Project field walking programme and also during the excavations, particularly in the 2002 and 2003 seasons (Head *et al* 1997: 236; Bradley 2007:64-66). The excavation also indentified a mortuary enclosure. This appears to have been built on the larger island during the Bronze Age, although it was partially obscured by the Iron Age features. This feature was only identified as Bronze Age through the dating programme and in the post-excavation analysis of the site (Van de Noort 2007a: 56). No Bronze Age material was however identified at the time of the excavation.

The small enclosure appears to have been an adjunct to the large enclosure, and formed a part of the entrance way. It is surrounded by a well preserved bank and ditch, and was sampled with a trench across one arm of the entrance during the evaluation phase of the Sutton Common Project. The arrangement of overlapping ditches to the south west suggests an entrance with an opposing exit to the north. This exit directly faces the western entrance of the large enclosure across the causeway. The western entrance is one of two entrances to the large enclosure, with a second and larger gateway which faced due east.

The defences that surround the large enclosure are not consistent for the full circuit. For the most part they consist of a wide outer ditch, an outer bank, and a further inner ditch. Inside that, a parallel rows of large post holes around the inside of the fort point to the existence a box rampart. The outer

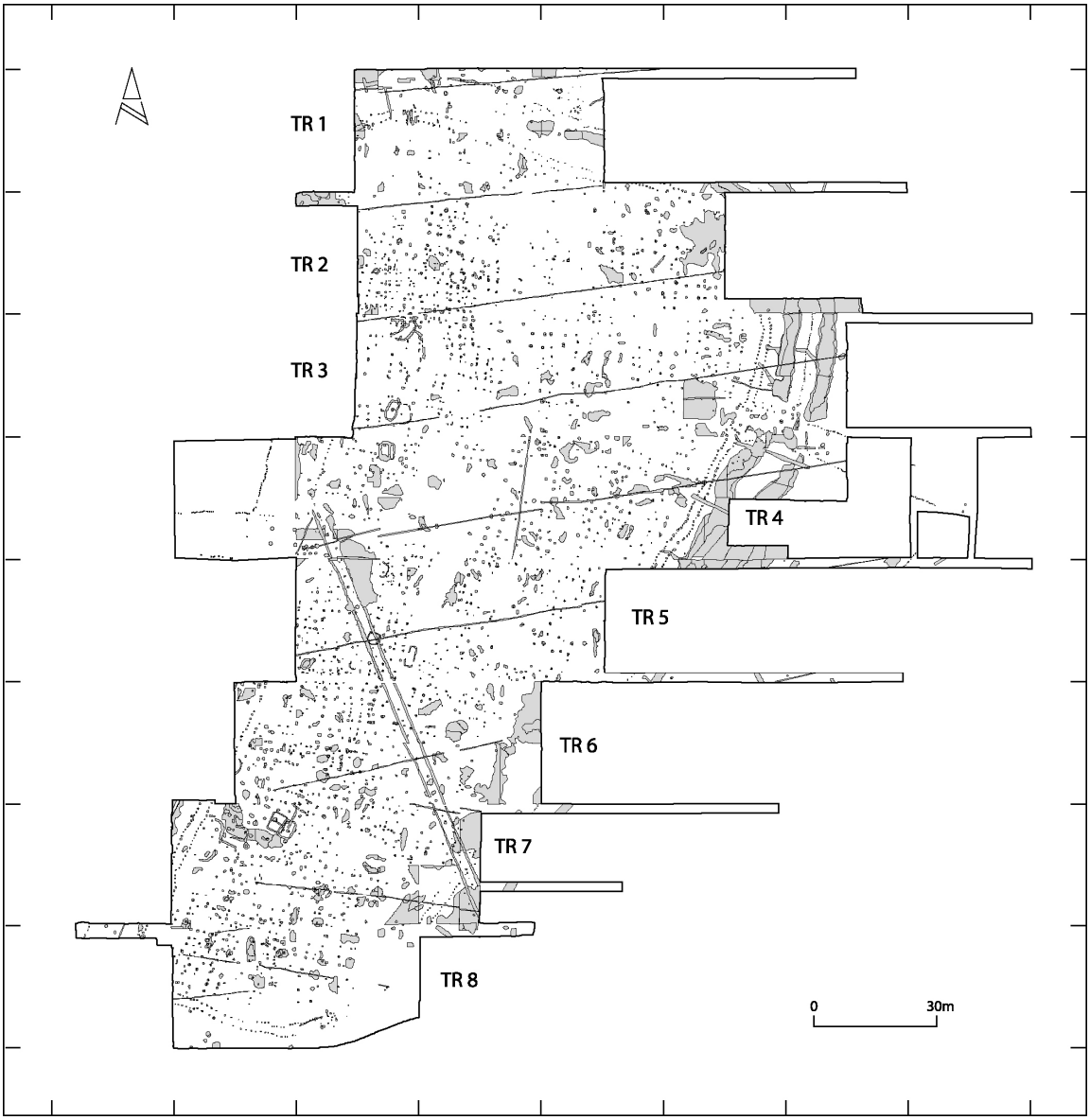

Figure 7.4 Sutton Common excavation plan showing all features from the excavation 1998-2003 (After Van de Noort et al 2007: 43)

ditch, particularly around the eastern side, was relatively shallow but the peat deposits and good preservation of organic artefacts suggest this may have being waterlogged from the outset. A wide water-filled feature such as this would have given the impression of a bigger and more substantial ditch. Like the outer ditch, the inner one also appears to have been waterlogged, with the bank between the two ditches having evidence for a palisade. A palisade was also seen running along the edge of the Hampole Beck. This formed the outermost defence along the western side. The eastern entrance is easily the

largest and most impressive of the two and the defences here are at their most advanced. The outer ditch for example, is much shallower and more segmented when seen to the north and south. The box rampart is, however, the most consistent of the defensive features, appearing in all areas of the site.

The approach to the eastern entrance was formed by two converging lines of posts, with the entrance itself dominated by a number of large posts. The path then narrowed through the box rampart, where the terminus bulged out to incorporate a guard chamber. The western entrance by contrast was approached from the causeway. A palisade marked the outer defences and the entrance itself was flanked by three pairs of large posts, a large dump of stone was indentified in the entrance way, and further evidence of a stone revetment was also excavated. The box rampart continued to form the innermost element of the defences around the western edge.

The interior, with the exception of a well, and one or two more substantial pits and hollows, was full of post holes. These were interpreted as the remains of four-post granary structures. Many of these features were identified in plan, and only a few were fully excavated. They formed both small discrete groups, and also long parallel rows. A number of these had surviving posts, and many also had traces of charred grain. The grain, in stratified contexts below the surviving posts has been understood as a foundation deposit, placed in the post holes during an activity associated with construction (Van de Noort 2007b:133).

Apart from antiquarian discoveries, which included an oak ‘wheel’ and a baked clay net sinker there have been few dateable finds from the site (Van de Noort 2007d:136). The excavations by Sheffield University produced a notched ladder and with the exception of the prehistoric flint, only a few fragments of pottery, an antler comb, broken querns and the remains of two human skulls were recovered from the 2003-4 excavations. The scarcity of finds and the nature and location of their recovery have been discussed in term of structured deposits (Cumberpatch and Van de Noort 2007: 136). The skulls, in particular, were placed in the terminus of the outer-most ditch of the eastern entrance, and the antler comb in the terminus of the inner ditch. The preservation conditions have also allowed the recovery of a substantial

amount of timber. This ranges from the *in situ* base of smaller posts from things like the palisade and four post granaries to the bases of some of the enormous entrance timbers with their chamfered ends and carved towing loops. In addition to the posts, woodworking debris and reused timbers were also recovered, often used as chocks and packing for the larger timbers. The reused timbers included a piece with a mortice hole and a possible wedge (Thomas 2007: 95-101).

Figure 7.5 Post in post hole from trench 3 showing the extent of desiccation (after Van de Noort et al 2007: 36)

With the absence of finds, reliable dating of the site was an important factor, and dendrochronology analysis of the timbers proved to be the most successful, with the dated timbers from across the site pointing to construction after 372 BC (Nayling 2007: 91). A full programme of radiocarbon dating was also undertaken across the site, particularly to combine the palaeoenvironmental study with the artefactual material (Hamilton *et al* 2007: 44). It appears from the study that the site could have been very short lived, and it appears to have been abandoned soon after construction. There is no

evidence for later development on the site, in the way that some of the more famous Iron Age hillforts sites such as Maiden Castle had been embellished during the later Iron Age (Sharples 1991: 16). One further Iron Age phase was however identified. At least 12 small mortuary rings or enclosures were identified and excavated (Chapman and Fletcher 2007b: 151-156). It appears from this evidence that the site was used for burial in the later Iron Age, between the 4th and 2nd Century BC (Hamilton *et al* 2007: 156). Calcined human and animal bones, and blue glass beads were also located within the mortuary rings themselves, and a further association has been made between a gold ingot find and this burial phase (Van de Noort 2007c:161-165).

Phase	Activity	Date	Evidence
1	Prehistoric finds relating to use of the sand islands prior to the main IA construction phase. Bronze age mortuary enclosure and bronzes known to have been found locally.	Mesolithic to Bronze Age	Microliths, tools, blades, axes and arrowheads located during field walking and excavation. BA Enclosure found during the excavations, previous BA tools known
2	Construction of the fort – defences include earthwork bank and ditch, palisade and box rampart. Interior, mainly granaries.	Early Iron Age – c. 372 BC	Excavations from 1933 to 2004. Dated by dendrochronology. Few finds include querns, and a comb. Previous record of wooden tools/ladder also known
3	Site abandoned and later reused as cemetery or burial area.	Middle to later? Iron Age - 390 – 200 cal BC	Excavated during 2003/4. Radiocarbon dates and stratigraphically later than four post structures (Hamilton *et al* 2007:156)

Table 7.7 A summary of the interpretation of archaeology and site phasing

7.4 Palaeoenvironments and the history of palaeoenvironmental analysis

The landscape context and palaeoenvironmental history of Sutton Common, from both the earlier excavations and the most recent work, has been comprehensively explored, most recently as part of the Sutton Common Project (Gearey 2007b:58–64). For this work, a full assessment of the site's palaeoenvironmental potential was undertaken which included analysis of palaeoenvironmental sequences adjacent to the site, an appraisal of previous research, and an assessment of the landscape context of Sutton Common. A

fully integrated and specialist-led excavation methodology was also employed. This meant that environmental sampling was placed at the heart of the excavation. The overall contribution that the recent excavation has made to our understanding of the local environment in the Iron Age, and the anthropogenic activities that impacted upon it, is therefore significant. Because of the thorough and detailed nature of the 2007 publication, only a summary is provided here.

The palaeoenvironmental resource of Sutton Common can be divided into two main components, the on and off-site deposits. The on-site deposits are part of the archaeological resource, and consist of excavated material from waterlogged contexts. This type of deposit can contribute considerably towards environmental reconstruction when excavated, sampled, and analysed in the right kind of way. The on-site resource from Sutton Common for example consists of the waterlogged fills of features such as the main defensive ditches, entrance posts holes, and also from interior features such as pits, post holes and a possible well. The ditch deposits in particular have been used to provide information about the period when the site was in use and from the immediate post-abandonment phase (see Gearey *et al* 2007: 101). A deep well was also discovered and excavated. This had worked wood preserved at its base, and a good waterlogged stratigraphic sequence (Chapman *et al* 2007: 117). Some of the best preserved examples of wood working debris and timber off-cuts were discovered in post holes, where the timbers were reused as chocks and post-packing (Chapman and Fletcher 2007a: 77). The waterlogged fills of postholes were also shown to include other preserved macros-fossil remains that date to the foundation of the site.

The archaeological wood assemblage as a whole has provided an insight into woodland management, and has contributed to our understanding of forest and woodland composition (Thomas 2007:95–99). This material has also been used to analyse woodworking technologies in the Iron Age, and a number of timbers recovered from the site were dated by dendrochronology, and provided an absolute date for the construction of the site (Nayling 2007: 91). Iron Age sites rarely provide absolute dates. This is, therefore, an important aspect of the contribution the assemblage has made to the research record, and it further increases the informational value of the site.

The off-site deposits are seen as the more traditional sources of palaeoenvironmental information, and include local wetlands and riverine or floodplain sequences from the numerous rivers and tributaries. These primarily comprise of sequences from the Hampole Beck which bisects the small and large enclosures and those from Shirley Pool which is 400 m to the east. A considerable amount of research has been undertaken on the Shirley Pool deposits. An assessment of the lithostratigraphic information was undertaken as part of the assessment work by the University of Sheffield (Parker Pearson and Sydes 1997: 230-233). Further geo-archaeological work, was undertaken as part of the Humber Wetlands Project and also as part of the subsequent evaluation of the site for the Sutton Common project (Dinnin 1997: 67-73 and Lillie and Schofield 2002). A more comprehensive analysis was published as part of the recent project which combines a comprehensive re-assessment of the sequence, new radiocarbon dating and a combined summary of the previous work (Gearey 2007a: 61-64). The Hampole Beck, which separates the two enclosures, offers a sequence of early-mid Holocene deposits, although the upper part of the sequence has been shown to be significantly affected by drainage and ploughing (Gearey 2007b:58). Shirley Pool is a different type of wetland altogether. It formed in a geological fault, and has a deep peat sequence in excess of 8 m. It dates back into the early Holocene and provides a record of vegetation history from the early Holocene through to the post Iron Age/Romano-British period. This sequence has also proved informative to a more academic and specialist audience (e.g. Dinnin 1991). In addition to the sequences at Hampole Beck and Shirley Pool, a wider geoarchaeological background has been provided by the survey work undertaken as part of the Humber Wetlands Project (see Dinnin 1997). Coring work undertaken provided a different scale of information, but has allowed Sutton Common to be placed in a regional wetland context.

Deposits/ Scale	Summary
On site	Stratified ditch sequences, post and pit fills, well deposits, wooden stakes and posts
Off site	Local - deposits from Hampole Beck and Shirley Pool, Regional - sequences from river valleys and the floodplain of local rivers, Went, Don, Aire, Ouse, Trent etc

Table 7.8 Summary of palaeoenvironmental deposits present at Sutton Common

7.5 History of archaeological management

As discussed previously Sutton Common remained unenclosed until 1858 and it was the last significant land enclosure in the region (Miller 2004: 35). This is attested by the Ordnance Survey 1st Edition 6" map of 1854 which shows that the extent of the common is significantly larger than the present day (see Chapman 2007a: 5). Earlier drainage ventures across the Humberhead Levels in the 17th Century are likely to have lowered water tables across the region, but Sutton Common in a marginal location may have been largely unaffected until the post-enclosure period. This process will have introduced the first consistent drainage ditches across the common and divided up the area into current the field pattern. The effectiveness of the drainage was still likely to have been of limited value and the Common continued as pasture, covered in rough grass and grazed until the early 1980s.

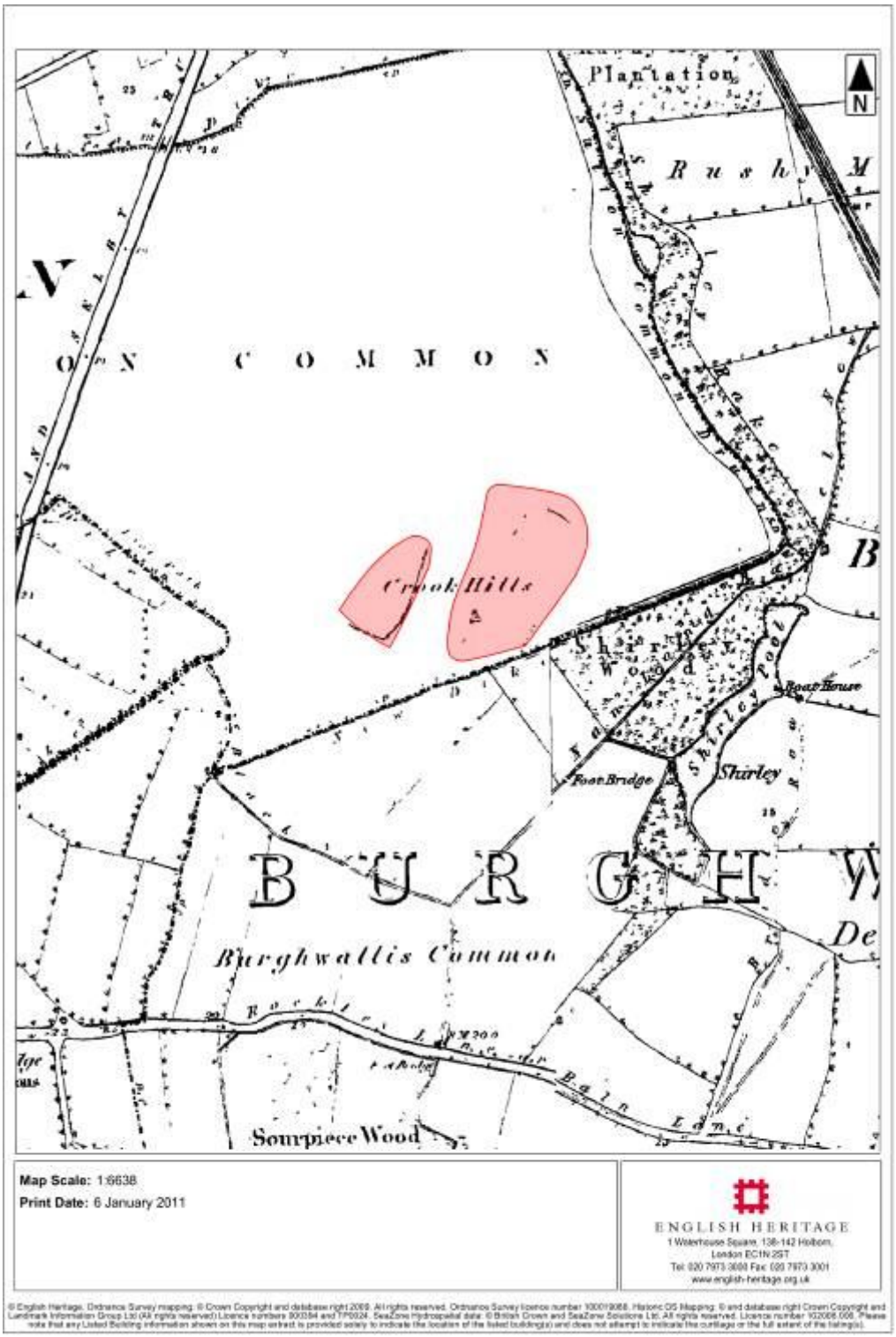

Figure 7.6 Sutton Common Scheduled area shown in red, overlying the historical map c. 1890 (English Heritage)

The land was only turned over to arable agriculture in the 1980s. This is likely to have been a response to the Common Agricultural Policy, where

the maintenance of grain prices across Europe led to much land being converted at this time. As part of this 'improvement' the large enclosure was bulldozed and new field drainage was introduced with the aid of a MAFF grant in 1982. This also saw the field edge ditches deepened to 2 m (Van de Noort 2007d: 21). The consequence of this action was that the water table across the site was significantly lowered, which has altered the below ground structure of the site irreversibly. Between 1980 and 1997, the land was used for a range of arable and root crops including wheat and potatoes, resulting in considerable plough-damage to the archaeological and palaeoenvironmental remains in the area of the large enclosure.

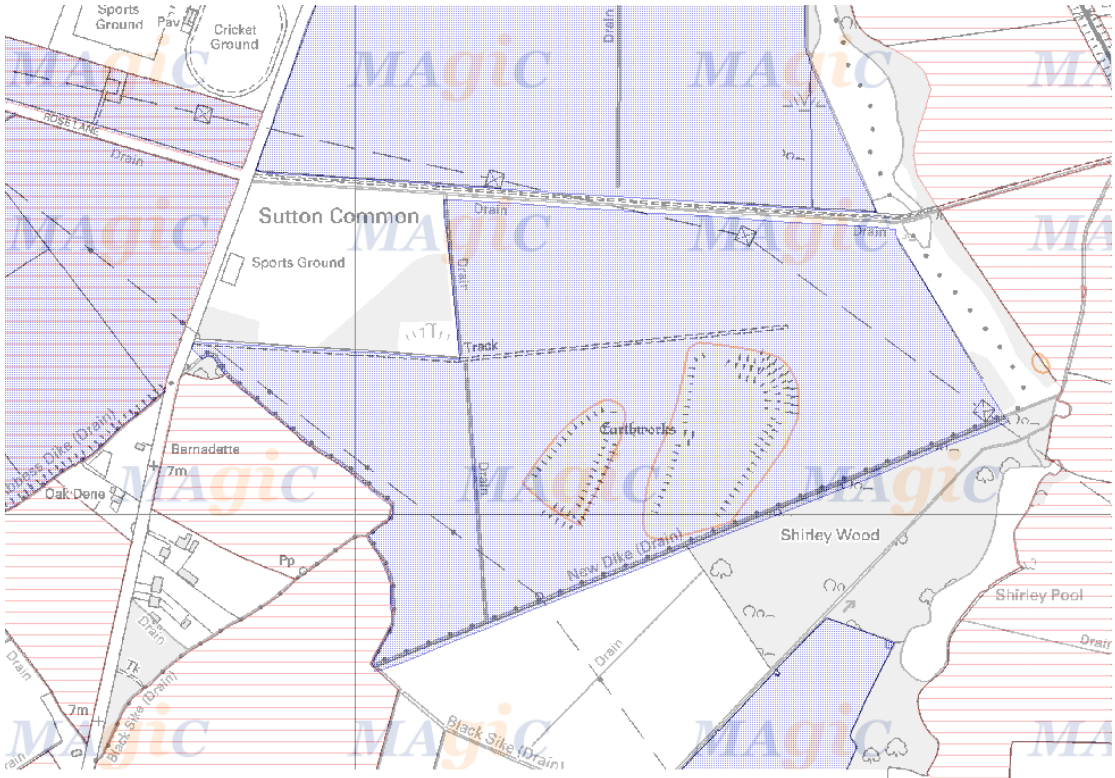

Figure 7.7 Magic map (North to the top). Current areas of active management (generated in Nov 2008 from www.magic.gov.uk) [Key: Orange = SM, Blue = Countryside Stewardship, Green = Higher Level Scheme and Red = Entry Level Scheme]

There is also a legacy of smaller and less well defined changes left from the intensive agricultural period, which continue to have implications for

the current and future management. In particular the activities have changed and altered the soil's characteristics, so that the previously acidic waterlogged *podzol* soils have become more alkaline, as evidenced by the presence of earthworms. The soil now has the structure and characteristic profile associated with ploughed land, and it could many years before it naturally reverses (Van de Noort *Pers. comm*.). There is also significant chemical residue from the broad-spectrum fertilisers and chemicals controls that were used extensively across the site, which continue to impact upon the preservation.

With the ownership transferred to CCT in 1997, no further ploughing has taken place and the land has been allowed to revert to a managed pasture. The site is currently grazed with cattle, and parts of the field are cut annually for hay. Due to the previous arable regime, weed crops such as thistles create a problem that also needed to be managed. The drainage has now been reverse engineered, which has involved both modelling the archaeological deposits and the water table to understand if suitable water levels could be re-established. These works were supervised by a consultant drainage engineer, with the aim to hold the water level at c. 4.1 m OD, thus keeping the lower deposits in the ditch of the smaller enclosure waterlogged, and contributing to a wetter Shirley Pool SSSI (Van de Noort 2007d: 23). This included the construction of dams in the drains surrounding the Common, and the re-engineering of the internal field drain system (Carstairs 2004: 13). The archaeological monitoring also formed part of a PhD study (Cheetham 2004). This, plus analysis of the results work and the implications for the archaeological resource have also been published extensively (see Van de Noort *et al.* 2001; Chapman and Cheetham 2002; Van de Noort 2007d: 21-25 and Cheetham 2007: 25–32). It is believed that hydrological monitoring at Sutton Common was one of the earliest attempts to characterise the hydrology of an archaeological wetland site and model the results in three dimensions. Its initial results played an important role in the decision making process for targeting the excavations in 2002 and 2003, and in the management of the site.

Despite this work, and the optimism surrounding the initiation of the project, the results suggest only a partial success. It remains difficult to

maintain the water table consistently to completely water-log the archaeological deposits at the required depth (Carstairs 2007: 184). The long-term future of the preservation of the waterlogged deposits at Sutton Common has therefore not yet been secured (Cheetham 2007: 31). Waterlogged components of the site continue to be under threat, and the desiccation of archaeological deposits has not been halted completely. Most alarming and almost counterintuitive is that '…flooding an archaeological site may in fact be destructive where it is perhaps assumed to be beneficial' (*Ibid* 2007: 31). The research clearly indicated that the preservation of waterlogged archaeological sites is more complex than previously considered, and that flooding recorded during the monitoring may have had a negative effect on preservation. Nutrients and their transport through the soil profile appear to have a harmful effect on soil chemistry, and causes long term changes in burial environment. Reversal of this effect is complicated. The first year after this reversion however, extensive areas of soft rush reappeared in the lowest areas of the site, including the palaeochannel of the Hampole Beck. This suggests that in bio-diversity terms, some of the actions have worked, and the environment on the surface continues to develop as a habitat.

Overall, the archaeological excavation and palaeoenvironmental research has proven the high potential of the site and its importance, and further potential clearly still exists. Furthermore, the management of the site has returned the physical surface environment to something approaching its previous condition, which is key to the provision and delivery of a conservation benefit. In spite of the research invested in the management of the archaeology and the re-wetting programme, parts of the archaeological remains are still at risk. The conditions needed to protect the most sensitive of the archaeological deposits, those nearest to the surface and in particular those situated across the two enclosures cannot be fully achieved during an annual cycle. For this case study site however, it is arguable that, although the site has stabilised to a certain degree, sufficient knowledge has been gained through the excavation to provide a sufficient record of the site.

It is clear that in management terms, a balance needed to be sought between the *in situ* preservation of sufficient archaeology to maintain the site's

Scheduled status, and other ways of recording the most vulnerable and fragile deposits.

7.6 Implications for management

A management plan for Sutton common was developed for HMEW in 2004 (Fletcher and Van de Noort 2004). The main implications for management were broadly considered to be:

The fragility of the archaeological resource

- The importance of material recovered from wetland archaeological sites and from wet context has been proven to be of considerable value to aid our understanding of material culture and of past environments, perhaps more so than Iron Age settlement sites from other dry landscapes. Research undertaken at Sutton Common has shown what can survive in the way of waterlogged Iron Age finds, and just how valuable this material can be. This includes waterlogged organic artefacts, and palaeoenvironmental deposits. The potential for the recovery of such material and its value as archaeology is therefore considered to be high.
- Organic archaeology and its components are amongst the most fragile and sensitive of all archaeological materials. The rarity of the organic material at Sutton Common, its date, and the proven value of the site in archaeological terms makes this a very important archive. The long-term survival of the organic archaeology here is not guaranteed. This is about maintaining the conditions that existed at the time of burial so that the structural timbers, organic finds and the archaic peat will survive. In spite of all the research and the measured plan to reverse the de-watering and drainage effect this is by no means assured. Since the site hydrology has been so comprehensively altered over a period of time, preservation *in situ* is now not considered to be fully possible. The excavation archive is in effect providing preservation by record.
- The issues include ground water contamination, nitrate input from floodwater run-off and possible chemical contaminants in farming

residues. Variable topography, mixed soils, and changes in surface and sub-surface conditions may create variable preservation conditions across the site.

- The deepest parts of the site, which have remained waterlogged and well-buried, are likely to be the best preserved and will survive the longest. A fluctuating water table on a vertical axis creates an intermediate zone of variable and declining preservation. For vertical linear structures (e.g. *in situ* posts) this creates a vertical preservation situation, where the base is well preserved, the top is poorly preserved, and the middle section is only partially preserved. The status of this middle section and the depth of the desiccation is dependant upon how long the post has been subjected to fluctuating water tables, and how much they fluctuate. Chemical loading and the other external factors mentioned above may accelerate this decay.

Access, boundaries and site ownership, and maintenance of drainage

- Although the known archaeology of the site is firmly contained within the CCT landholdings, the wider drainage pattern and likewise the palaeoenvironmental deposits extend across and beyond the landholding boundaries. In order to safeguard the on-site resource it may be necessary to look outside the site and to involve wider co-operation across local ownership boundaries.
- The water table cannot be raised further without substantially affecting neighbouring areas. If further gains are to be achieved then co-operation over a wider area will be required. For example, a multi-agency project, headed by the RSPB and funded by the Environment Agency, to flood former riverside meadow to create a reed bed habitat at Snape in Suffolk had to be shelved (c. 2008) when it was found that problems on adjacent landholdings had not been addressed (Rob Macklin, *pers comm*.).
- The land is used as floodwater storage in times of peak water. A number of the drainage requirements are therefore controlled by external agencies including the Highways Agency. This means that the

quality and quantity of water cannot be controlled at all times. Overflow from roads, with all the contaminants it contains is a potential difficulty.

- Water abstraction in the area is controlled by the Environment Agency.

Conflict of interest

- There have been clear conflicts in the past between agricultural practice and the management of a Scheduled Monument. The bulldozing was an illegal act and the grant-aided drainage was at odds with the preservation needs of an archaeological site, in particular a wetland archaeological site. Ploughing and subsequent arable farming including root crops has further damaged the site. The legacy of the farming interest may be lasting.
- Conflict has significantly reduced with the transfer of the land into the ownership of CCT, and the objective of managing the land for the benefit of the archaeological resource has meant that conservation, agricultural and archaeological needs are considered within the overall management. Put against the needs of the Scheduled Monument are the requirements of the land ownership and the farming regime. Although the monument is at the heart of the project, some conflicts will still exist. In particular through
  - The grant requirements for the Countryside Stewardship and the High Level Scheme
  - Maintenance of the public access to the whole site
  - Maintenance of the wider land drainage landscape

Knowledge and research

- This site has been systematically excavated and researched and a full base line exists for the site in terms of an assessment of preservation or water table modelling. The near continuous research programme at Sutton Common since 1998 has considerable implications for work outside of Sutton Common (e.g. Cheetham 2007:31). The monitoring of the water table, soil chemistry, the microbiology and the land management has been addressed.

- The work has shown that research at this level must continue to be a priority, and future work will continue to benefit other sites, to identify areas where research is lacking, and to ensure results feed back into future management. This wider focus should continue to involve inter-agency co-operation with integration of ideas to enhance the management plan and allow for aims and objectives to be critically assessed. As suggested in the iterative process of reflective management, this feedback will help inform on future directions.
- The work has also been fully published, yet the full implications of it need to be fully disseminated and realised in policy terms and put it into practice for future sites.

Area of concern	Issue
Ownership	Previous multiple owners- currently under CCT, however understanding local need is an issue.
Conflicting interests	Although under stewardship, archaeology preservation versus farming is still a conflict area. Conservation and drainage are also competing factors. With drainage in this case being reversed it is the need to maintain high water table that creates a conflict.
Fragility	Wet artefacts and deposits still affected by previous de-watering.
Research/knowledge	On-going research provided key knowledge on wet sites- wider dissemination and 'lesson learning' still an issue.

Table 7.9 Showing summary of management issues

7.7 Research Agendas and Frameworks

There is no overarching agenda or framework specific to wetlands, and sites like this need to be assessed through other related documentation. In this case the relevant document is

- English Heritage's Strategy for Wetlands (Olivier and Van de Noort 2002).

Likewise there is no Regional Research Frameworks for Yorkshire although this is currently in progress (www.algao.org.uk/Association/England/Regions/ResFwks.htm c. 2009).

Sutton Common and the Strategy for Wetlands

The strategy for wetlands is for the most part an overarching document without specific reference points for dealing with individual cases on a site-by-site basis. The strategy has four main principles (see Olivier and Van de Noort 2002:2). These promote:

- Better management though practical conservation mechanisms
- Better research
- Better outreach
- To promote wetlands policy in the work of local authorities, national agencies and intergovernmental bodies

Sutton Common, unlike Borough Fen was in some respects the exemplar for the application of these principles. Better management of the archaeology has been achieved to some degree through a concerted effort to implement practical conservation measures. A multi-agency approach to the issue has seen the land ownership transferred to CCT, with ongoing water table and hydrological monitoring, a reversal of the drainage, and a wide ranging programme of archaeological research. The site was also reverted to pasture under an Environmental Stewardship agreement with Natural England.

The site is managed in an active way, which looks more holistically at the site and focuses attention on the archaeological resource and the wet component. Research has allowed a full understanding of the quality of the archaeology, and its academic potential. Water table and hydrological monitoring have established the preservation conditions. A major programme of outreach was also achieved during the lifetime of the project and the site is partially accessible to the public, further work is planned to provide information and interpretation for the site. The fourth point has proved more difficult to achieve, and as the MAREW study has shown, a full understanding of wetland archaeology amongst curators does not exist at the moment. Those who have been involved with Sutton Common are now more aware of the issues; however more work is required in this field to promote the results.

One key phrase in the Strategy was a commitment to the development of '….programmes of survey and excavation as an essential pre-condition for the development of successful management practices and promoting applied research to underpin good management of wetlands and to inform future policy development' (Olivier and Van de Noort 2002). This looks towards the development of baseline studies for important sites, underpinned by good quality research, which in turn provides for the development of specific prescriptions on a site by site basis. The research at Sutton Common and the approach provides a bench-mark for future baseline studies at other sites.

Sutton Common and the Heritage Management of England's Wetlands Project

Under the Implementation section of the Strategy provision was made for the development of '…an inventory of the most important wetland monuments in England, and design and implement, where possible, site-specific conservation management strategies' (*ibid*). This became the HMEW project, for which Sutton Common was identified as one of the sites that should be included. Sutton Common was included to provide the benchmark standard and as a comparison against which other sites like the Borough Fen ringwork could be compared. Sutton Common had a demonstrable wet component, and significant archaeological deposits. Recent analysis and excavation provided a specific level of information relevant to archaeology and other related disciplines.

Sutton Common was therefore placed on the list of wetland '*type*' sites. Furthermore, the research and excavation put Sutton Common in line with the Strategy for Wetlands proposals as a 'beacon' sites. With its stated aim to 'Explore the potential, and develop the mechanisms, for some of these sites to be used as a pilot platform for interagency co-operation ('beacon sites') (*ibid*), the Strategy for Wetlands provided the rationale for the development of a management plan (see Fletcher and Van de Noort 2004).

Sutton Common and the Regional Framework

Unlike the East of England where the framework has been completed, the Yorkshire Regional Research Framework has not been completed. It is

therefore not known whether the framework does, or does not, have a specific wetland agenda or theme. Sutton Common might therefore only be assessed by the authors of the Framework in a period or settlement context. Likewise it is not known if the research undertaken at Sutton Common has been able to influence the writing process. From undertaking the Humber Wetlands and Sutton Common projects, it was clear that in Yorkshire, in common with East Anglia, has key gaps in knowledge. These include an understanding of Iron Age settlement, economy, and industry and agriculture. The dating programme at Sutton Common has also contributed much to our understanding of chronologies and temporal frameworks within the Iron Age.

Whilst Borough Fen is perhaps a priority candidate to inform the research that the East of England Framework sets out to address, the research undertaken at Sutton Common has been able to influence opinion and decision making, and has shaped agendas. It is hoped that the Framework for Yorkshire will recognise the contribution to regional and national research that Sutton Common has made. The site has also demonstrated the valuable nature of wetlands sites in their ability to answer questions in both national and regional agendas. This premise was used as the basis for the work at Beccles (see Chapter 8). The work of the Humber Wetland Project, like that of the Fenland Survey has also helped towards our understanding of wetland development, has informed patterns of settlement and has also contributed in a thematic way to our understanding of the region's archaeology (see Van de Noort 2004).

Document	**Sites priority as defined by each strategy**	**Potential of the site - key elements**
Wetland strategy	**High**	HMEW List 'A' type site, potential EH beacon site. Genre defining type site. Demonstrated significant research potential
Regional Framework	**Not yet assigned**	IA earthwork contains published information on period, dating. Has helped to refine IA chronologies. Good site sequences, including on and off site palaeoenvironmental deposits. Finds assemblage include preserved timber, wooden and other period artefacts, and human remains

Table 7.10 A summary of priorities as determined by the relevant research agendas

7.8 MPP scoring and Value

Sutton Common has not been part of an MPP review or analysis of the scheduling. The table below (Table 7.5) has therefore been created for this analysis using the MPP criteria, such as period and rarity. The assessment and score are based on information gained during the creation of this case study, and the score is demonstrated in a way comparable to those of the cultural value analysis below. The MPP scoring in this instance has also been looked at specifically to see if the wetland component such as location, setting, and potential might affect the outcome. This is because it is perfectly possible to look at the monument without ever seeing its wet potential; however this knowledge may heighten the site's value if the wet component can be fully appreciated.

In short Sutton Common is an important monument and a valuable heritage asset. It fully warrants and justifies its scheduled status, and the excavation work has enhanced this status, not detracted from it. If the MPP process is understood as an internal analysis, i.e. one which is based only on comparison with other archaeological sites, then it clearly scores highly. In rarity and period terms it is exceptional. There are few sites like it anywhere in England. It is a site that has captured the definition of a new monument class (marsh fort), which is likewise an uncommon monument in the archaeological record. In addition it has elements which survive well as earthworks although the site is no longer in a damaging arable context so is now less vulnerable to constant damage than in the past.

MPP Criteria	Assessment	Score	Analysis
Period	High	3	It is an important site for its period. A number of Iron Age sites are known from the region, but mainly from the limestone uplands to the west. Iron Age wetland sites are very uncommon across the lowland areas
Rarity	High	3	Large multi-vallate Iron Age settlement sites are rare. Likewise marsh forts are also uncommon monuments types. Sutton Common is however also considered to be unique, with double

			enclosure, unusual construction date and a demonstrable wet component
Documentation	High	3	Considerable and fully documented investigation. Age, context and character all fully demonstrated and published in full.
Group Value	Low	1	Sutton Common is a single unique monument without local or regional comparison
Survival/ Condition	High	3	Excellent condition and survival of small enclosure. Excavation demonstrated that good deposits also survive across the large enclosure, and enough remains after excavation (c.90%) to continue to warrant scheduling. In general, few other earthwork sites of this period are known to survive. The survival of organic artefacts and palaeoenvironmental deposits was also demonstrated by the excavation, although the continued survival of the shallowest organic artefacts is unlikely in the future. The site has been heavily compromised in the past. Beneficial management is in place and should safeguard the most stable features for the future
Fragility/ Vulnerability	High	3	The wetland deposits are very fragile, as are the larger organic artefacts. The site as a whole continues to be extremely vulnerable. Although not under pressure from arable agriculture, it is still at risk from decay caused by drainage, de-watering and desiccation
Potential	High	3	The informational value of the site has been demonstrated as high. The scarcity of knowledge of sites like this has added considerably to the archaeological record

Totals	**Low = 1** **Medium = 0** **High = 6**	**19/21**

Table 7.11 MPP criteria and scoring

As a site in a wetland it is however more fragile and vulnerable than other types of site, because it relies for much of its informational value on the preservation of organic archaeology. The loss of this resource would be more devastating. The wet context does however mean that the site must be considered as having a higher value because of the range and scope of the information that it contains. In this case then, the environmental factors do increase the site's importance, however the earthworks and the period/rarity aspects would still make it a valuable and nationally important site even in a non-wetland context.

7.9 Assessment of cultural value

As discussed in Chapter 4, the analysis of archaeological sites for their cultural value is not regularly undertaken, however archaeological sites have the potential to score highly against, or when viewed with, these criteria. If MPP is seen as internal or archaeological only type of analysis, then this is an external or comparable analysis. It specifically looks at the value of archaeology in relation to the indicative criteria for cultural capital.

Value Type	Assess-ment	Score	Analysis
Aesthetic	Medium	2	The surviving earthwork is potentially more appealing in aesthetic terms than remains at other sites. The visual impact of the site from the air and from antiquarian photographs is good but the site's overall appeal is muted by the nature of the landscape. Likewise on the ground it is difficult to see the site now, partly because of the pasture in which the earthworks are sited and the large enclosure having been bulldozed. Although the small enclosure still survives the only real way to appreciate the site as a whole is from the air. This site does not compare visually with similar period hillfort monuments, which often have all-round visual appeal
Authenticity	High	3	An original monument in good condition with many surviving and original features, e.g. the small enclosure. The value here is not specifically dependant upon the wet resource, but also on surviving above-ground features such as the earthworks. The site has a degree of integral and original and surviving deposits, therefore it retains its integrity
Bequest	High	3	Information value here has been shown to be high (Van de Noort *et al* 2007), therefore legacy and bequest values are also strong. This represents the information about the past that this site can inform the future use. As parts of the site are relatively intact and management is built around retaining the archaeology, then the site has proven intergenerational equity. Even without its wet potential the value of the material culture would be high. Wet potential adds a valuable new dimension, in terms of the known cultural material
Communal	High	3	This site represents the communal values of our ancestors and is illustrative of a shared effort; this site can therefore link together ideas of collective spirit and enterprise. The site is also well known locally and the land on which it is based is considered by the local community to be an asset. This communal view of ownership may be a relict from the knowledge of the site as common land, and one of the last enclosed local areas. The site is now held in trust by CCT

Cultural	High	3	Although this has come to mean the overarching value, in the sense of the publication from which this indicator was derived this value was thought to be how the site engender is sense of communal and public worth. To some degree this site delivers as both a local site of interest and communal endeavour. It is owned by a Trust and management for local benefit
Economic/ Market	Low	1	Arable agriculture dominated the landscape, and there is pressure on non-productive land. The site has been ploughed before, which reflects arable intensification. The economic potential of this land if under arable is high, although maintenance of land drainage would be a cost consideration to the land owner. The site does however also score highly as an asset on other cultural value indices therefore as a well preserved site with strong bequest and informational value the balance has been settled in favour of the preservation of the site It does also have moderate income generation capacity as a monument, through the grant aiding process
Educational/Academic	High	3	Proven record in academic interest and information for the site is in the public domain
Emotional	Medium	2	This site has been shown to provoke a moderate emotional response locally, and is well known academically through publication; although academic reference does not often engender an emotional response in readers. It must be considered however that further loss of the earthworks would be saddening and unnecessary, and is likely to invoke a strong local response to the loss of community space
Evidential	High	3	As a store of both artefactual and environmental data this site has high evidential value. It has power of place and cultural associations. The wet component provides a known extra dimension associated with the site. The value is proven through research, and is not just potential. Further degradation of the burial environment would affect the evidential value
Existence	High	3	See Emotional (above). The loss of this site after the amount of effort which has been taken to preserve it (land purchase, trust status, reverse drainage, excavation etc) would be saddening. Although the pressure and requirements for agricultural land are present, environmental stewardship schemes and the designated status of the site should balance this. There is therefore is no excuse for this site to be lost. Its inheritance value is also good An interesting point is that the wet component here is very important to the site's informational value but unlike Borough Fen it has been fully quantified. The site's other assets (the small enclosure) are still significant in their own right, but the bulk of the site exists only below ground. Much of the significance therefore relies upon the organic preservation. Further degradation of the

			burial environment would affect the existence value, but some evidence of material culture would survive including the earthworks of the small enclosure
Historical	High	3	An important site and archive, which has integrity, strong evidential and information values. Identified in a local, regional and national context as important.
Informational	High	3	The on-site resource consists of archaeological, palaeoenvironmental and geoarchaeological assets. It is also a surviving earthwork and has group value with other monuments in the landscape. The linkages through to the palaeoenvironmental sequences immediately off-site are also high. It scores highly through many informational linkages
Resource	High	3	High information and academic values, earthworks and open space, combined with local presence and interest suggest the resource value here is high
Recreational	High	3	Land in trust with local interest, potential for visitors, earthworks survives as landmark, with open space for activities. Open days proved successful
Social/ Community	High	3	See communal (above). The site links the past with the present community, through the communal value placed on the land by local people. The archaeological site is well known and respected locally. The archaeological work was also carried out in the public eye and had a community component (local school etc) it is hoped that this will continue to engender local ownership, knowledge and respect into the future
Spiritual	Medium	2	The spiritual value of some sites, particularly megalithic structures is higher than others. Sutton Common is perceived as being perhaps less spiritual that other known sites; however the site does have local traditions and myths associated with it which provides some associations. Archaeological evidence also suggests the site has in the past been the focus of prehistoric burial rites
Symbolic	Medium	2	If it is seen to be of moderate spiritual value (see above), it is likewise moderately symbolic. This is both the recognisable Iron Age association and local meaning. Could be understood as both symbolic of its period, with a recognisable form and function, and as a powerful local place

Totals	**Low = 1** **Medium = 4** **High = 12**	**45/51**

Table 7.12 A summary of cultural value indices

As for Borough Fen, the value of the site at Sutton Common when analysed is high across the board, however within the value system the wetland component does add considerably to the site's overall value. The loss of a significant part of the earthwork in 1980 combined with the archaeological nature of the site, means that the wet-preserved archaeology is part of the narrative. In this case, because the wet component is a recognised and quantified part of the site's cultural value, loss of that aspect of the resource and store of information would reduce its overall value. There are other factors here which contribute to the site's value, however, and these include the importance of the place itself, and the small enclosure which survives as an earthwork. These also contribute to the site's overall cultural value. Information which has been gained through the research is preserved by record, and this balances future loss to some degree. The archive provides transferable knowledge of the most fragile deposits, and has placed substantial amounts of information in the public sphere.

7.10 Assessment of economic value

The analysis in this section is presented in line with the economic value diagram presented in Chapter 4 which depicts the cost scenario for Archaeological Preservation (see Figure 4.4). Two tables are presented below. The first outlines the economic inputs, positive values and current annual income (see Table 7.7). The second (Table 7.8) presents the negative costs associated with management.

Economic Inputs	+ ve economic values	Annual income
Cultural Value	Site rates highly	n/a
Land value	Land held in Trust, and purchased with grant aid, therefore has limited resale value	n/a
Earning potential	Proven grant earning HLS annual income	 c.£12,000/year
Funding and grants	HLF English Heritage English Nature Countryside Commission WREN CCT investment	£75,000 £40,000 £32,000 £16,000 £16,000 £25,000

Table 7.7 A summary of economic inputs

Management Costs	- ve economic values	Costs
Assessment of value and significance	English Heritage grants for evaluation, site assessment, hydrological monitoring and palaeo-environmental work	£540,000
Development of Management Plan	Undertaken by HMEW from publically available sources	£3000
Repair/restoration	Drainage engineering and other works	£32,000
Land purchase	Purchase of land by CCT	£150,000
Offsetting farming income	HLS value offset loss of income	c.£12,000/year

Table 7.8 A summary of management costs

For this site the economic value scenario is one of active management. This has seen the passive nature of previous actions, such as the designation of the site as a Scheduled Monument change to an active approach. This change in management was a direct response to acts of damage and perceived threats to the sustainability of the archaeological resource.

This scenario also represents the sort of partnership undertaking required to make large scale changes to preserve an important archaeological site. In particular this includes the combined resources of Government and Non-Governmental agencies, historic environment and natural environment bodies, academic and research interests and public and private individuals. Significant public sector funding was required to enable the initial land purchase; further grants were needed to undertake the engineering works to reverse the land drainage, and the archaeological assessments, including the water table modelling and an archaeological excavation. This has also involved different agendas, in particular, accommodating the needs of the natural and historic environments and local public need. The nationally important agendas that have been considered at Sutton Common are specifically those for archaeology, conservation and biodiversity. Regional priorities have also been addressed, in particular local land-use, water quality, agriculture, and public access. The personal roles of individuals through local interest, academic work or through CCT are also important.

In terms of the ability to analyse the value of the site, all relevant research has been published and is in the public domain. The information

which underpins this chapter has been drawn from available data. In addition, however insight has been added from my own involvement. This has demonstrated that the site has a high overall cultural value, and is protected as a monument under legislation. It has however a low income generation capacity as a visitor attraction and public access was secured when the trust obtained ownership. Moreover, although the site was physically damaged by the act of bulldozing the larger enclosure, and has been extensively excavated, it is still a Scheduled Monument and future activity is restricted. Part of the trust's landholding is also designated as an SSSI, providing an additional legal control mechanism. In terms of land vales, although arable land is still valued higher than pasture in this area, the nature of the site and its status under trust ownership and its high regard locally means that this land is valued out-with the income it can generate. Environmental Stewardship provides a further financial incentive to manage the site in a manner which benefits the needs of the natural and historic environment.

Taking the site from a passive to an active regime has however required a considerable cost input. The land was purchased with third sector grant aid (see Smith 2004: 4). The baseline preservation conditions for the archaeology, and subsequent archaeological work were undertaken facilitated by English Heritage through their grant programme. Other works, notably engineering, analysis of the drainage and natural environment consultation also needed to be funded. This represents considerable support for the site, mainly from the public sector, and could be considered as a series of one-off costs. This kind of investment recognises that the asset has considerable cultural value. The positive outcomes from the investment are that the archaeological site, earthworks and all intact deposits are held in perpetuity by a public trust. They also have a long-term sustainable future. The investment has brought the site to a place where the day-to-day land management costs are offset by Environmental Stewardship which protects both historic and natural environment features. Public access has also been secured. Much of what is valued about the site is managed and the on-going finances balance.

The legacy of this amount of funding should have also secured a sustainable future for the wet archaeological deposits. It has been demonstrated by the research that has been undertaken that re-wetting may

not be able to secure the long term sustainability of the wet deposits. This is in spite of all the interventions, and it remains as a negative issue.

The overall conclusion must be, however, that in seeking to value the site, all the values, agendas and needs that exist for Sutton Common must be considered. Other elements of the site, for example the extant remains, local significance and its biodiversity, are protected and managed sustainably. These make a major contribution to the site's overall cultural value. The site must therefore be considered significant even if the organic deposits and preserved elements of material culture were to degrade further. In addition, preservation by record, through excavation and publication will ensure that this element of the site's informational value is available in perpetuity.

7.11 Summary

Sutton Common was chosen as a case study because of the considerable work that has been undertaken at the site. The analysis presented here therefore represents an understanding of the costs associated with active management in a wetland context. It also represented a change in emphasis from passive to active management. The work is however extraordinarily complex and creating an active management regime has involved considerable involvement at organisational level but also from academics, specialists and the public. The one-off investment costs have also been high.

To summarise, the site has a high archaeological value. This understanding is derived from an analysis of the publicly available data, such as the archaeological research, and also in terms of the national frameworks such as the MPP criterion (see table 7.5 above). It is also a designated monument, so is therefore recognised and protected under legislation. In terms of the analysis of its Cultural Value it also scores well in a number of areas (see table 7.6 above), namely in authenticity, bequest, communal, evidential, existence, historical, informational and social values. The survival of the earthworks makes it an important site for existence, legacy and bequest values. In these areas it could be suggested that it rates higher than Borough Fen due to the value of the known resource. Having a demonstrable wet archaeological component, such as deposits of peat and preserved organic

artefacts, means the site has an additional value. In particular this heightens the historical and informational values. It is also a site at which physical archaeological remains in the form of the small enclosure are preserved. Low-land Iron Age forts such as this one are also rare in national context and are archaeologically valuable out with the existence of the site in association with wet deposits. It is also highly valued as an amenity and for a public access asset locally. Moreover, in natural environment terms it is designated as an SSSI, it is therefore valued an important habitat, for its bio-diversity, and as grazing land.

An informed look at the wetland issues suggests that the preservation of the more sensitive wet components have been irreversibly compromised by the drainage undertaken in the 1980s. An analysis of cultural value however accepts a more holistic view of the site as a significant item of cultural capital. The site, in a similar way to the Borough Fen ringwork, therefore scores highly out with the wet archaeological component. Part of the conclusion must be that although the wet preservation adds considerably to its archaeological and informational value, the wet material matters less to its overall cultural value. In economic value terms the designations, high cultural value and the trust's ownership protect the site and provide sustainability. The income derived from environmental stewardship schemes offsets the cost of its maintenance, provides economic balance and therefore an element of sustainability. In cultural terms the site was worthy of investment, and is still worthy of future protections.

Chapter 8 Archaeological sites in wetlands Case Study 3: A triple post alignment, in Beccles Marshes, near Beccles, Suffolk

8.1 Introduction

The discovery in 2006 of a triple post alignment in Beccles Town Marsh (see Figure 8.1), near Beccles in north east Suffolk is one of the most recent and unusual wet archaeological discoveries (see Gearey *et al in press*). It is also one of a handful of wet sites to have been comprehensively excavated and analysed in the modern era. At a little under 500 metres long, and dated through the site's dendrochronology to 75 BC, this is also one of the longest known linear Iron Age post alignments in the country and one of the best studied linear monuments of this period. Unlike Borough Fen and Sutton Common, this site has been discovered since the publication of Monuments at Risk in England's Wetlands (MAREW), English Heritage's Strategy for Wetlands, and Heritage Management of England's Wetlands (HMEW), therefore it was not included in the management analysis undertaken as part of those projects. The work at Beccles has, however, benefited considerably from the issues highlighted in MAREW, and the positions developed for the Strategy for Wetlands and HMEW. It has also profited from the research undertaken at Sutton Common and from a continuity of ideas thereafter.

In terms of written structure this case study is developed in a similar way to both the Borough Fen and Sutton Common examples (See Chapters 5, 6 and 7). As discussed previously, it was considered important in the context of this study, to have a more diverse type of wet archaeological site as a comparative example, however one which still had some comparable attributes. Beccles has a different set of archaeological attributes, and a different setting, form and function. A shared issue is that of definition. As previously discussed, a site's archaeological value is often defined by category or period-based research, where information gained from the established, studied and known sites is used to categorise newly discovered examples. There are many examples of well-preserved linear trackways across Britain (e.g. Coles and Coles 1978). Post alignment-type structures are, however, not so well known. Flag Fen is perhaps the most famous, with a post alignment forming a part of the site, which also includes a causeway and platform dating from the Bronze Age (Pryor 2001).

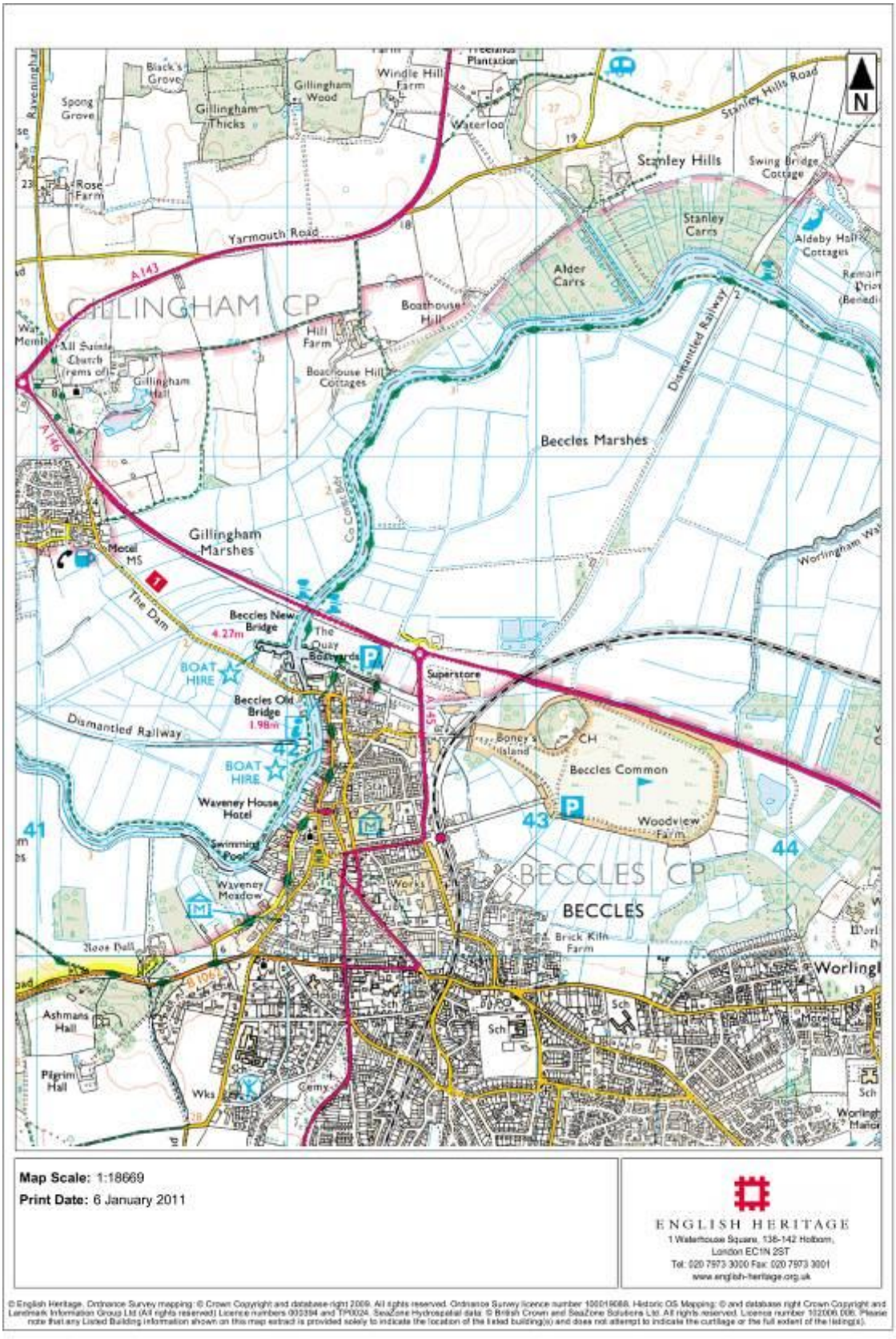

Figure 8.1 The Location of Beccles Marshes, Suffolk (English Heritage)

Another example is known as the Ditton Post alignments of Late Bronze Age date, which form part of the equally complex Bronze Age structures recovered at Shinewater, near Eastbourne (e.g. Woodcock 1998). The Harter's Hill 'pile alignment' in Somerset dates from the Bronze Age to 1019 BC on the basis of dendrochronological analysis (Thomas 2004; SHER Records 28306 and 25637). Only one other site, a large post alignment from the Witham Valley in Lincolnshire, has been dated to the Iron Age (see Field and Parker Pearson 2003).

The Ditton and Fiskerton post alignments have significant depositional functions, attested by the large quantities of high value metal work and other objects deposited at the sites, unlike the Beccles or Harters Hill sites. The Beccles post alignment is nevertheless exceptional: it is currently the longest post alignment known in Britain, and it is also the youngest example known from England. Few structures of any sort can be dated so precisely to this period, and a site where the preservation is so good is exceptionally rare. This potential archive, its period and its rarity makes this a site of national importance.

8.2 The site context

The objective in this section is to provide information into the site's situation including information relating to the background history, and a description of the physical characteristics of the site.

Background

The site was discovered during a routine watching brief on works to the bank of the south side of the River Waveney in 2006, at Beccles in Suffolk. This was part of an on-going 25 year programme of flood alleviation work taking place through-out the Norfolk Broads and its catchment, which includes the Waveney valley. The site was first noted during the construction of a soke dyke, part of strengthening works to the river flood defences. The soke dyke is a 5.0 m wide ditch, excavated behind, and running parallel to, the main defensive bank, which operates as a cut-off channel and takes seepage from the river (see Figures 8.1 and 8.2 below). The first excavations, funded through a PPG16 planning condition, were situated within the footprint of the

soke dyke. The work was undertaken by a joint team from Suffolk County Council Archaeological Service and Birmingham Archaeology, with students from Birmingham University. Alongside the excavation, a comprehensive on-site geoarchaeological survey and palaeoenvironmental sampling programme were implemented, and the site was fully sampled for palaeoenvironmental analysis, dendrochronology and radiocarbon dating. This work was initially published as an interim assessment report (see Gearey *et al* 2007). This was followed by analysis and the final publication is due in 2011 (Gearey *et al, in press*)

In 2007, a smaller survey and research excavation was undertaken by students from Birmingham University. This was designed to examine the post alignment further and explore the parameters of the site. The project was able to excavated further sections along the line of the causeway and the results will be published alongside the 2006 excavation (*ibid*). Subsequently a funding application was made to English Heritage to explore the site further (see Gearey *et al* 2008). The project design was approved in 2009, and provided the funding for a two-year programme which included further excavations, and a comprehensive multi-faceted research project, designed to characterise the archaeology and provide a baseline understanding of the burial environment. A focus was maintained on understanding the condition of the timbers and the peat deposits along the 500 m length of the post alignment, against variables such as land use, basal topography and changes in the burial environment. This was designed to act as a guide to future management and an attempt to predict the long-term prospects for the site's preservation. Work also included trials of new geophysical survey techniques, a comprehensive close interval coring survey, and sub-surface deposit and water table modelling. The fieldwork was completed in 2010.

This project involved significant local partnerships with the Broads Authority, the Town Council, the Environment Agency, and local businesses, charities and schools. Suffolk County Council Archaeological Services and the University of Birmingham have provided the archaeological expertise and specialist knowledge to the project. Negotiations are ongoing to secure the future of the site, to provide interpretation and to allow the display of material locally. Following the Sutton Common model, the strategy at Beccles was

designed so that less than ten percent of the site was excavated, in case the site was found to be suitable for preservation *in situ*, and important enough to be scheduled.

A separate scheme known as the Suffolk Rivers Valleys Project, funded by the Aggregates Levy Sustainability Fund (ALSF) was also undertaken in the Waveney valley between 2006 and 2008. The aim was to characterise the palaeoenvironmental and geoarchaeological resource of the river valleys of Suffolk with a view to exploring their potential for research and for the preservation of archaeological sites (see Hill *et al* 2007 and 2008) Part of this work was focused on the Beccles area and the results of this project have fed into the analysis of the post alignment.

Figure 8.2 The site seen during excavation of the soke dyke, and soon after the discovery of the timbers (SCCAS/Will Fletcher, Beccles 2006)

The Suffolk River Valleys Project provided a comprehensive analysis of the wider landscape context of the archaeological site, and the results have been used by the Beccles projects to help shape its strategy.

Figure 8.3 Site after discovery with pulled timbers in the foreground (SCCAS/Will Fletcher Beccles 2006)

Unlike Sutton Common or Borough Fen, this site was not known prior to 2006. The latter phases of analysis and publication are in press or remain to be completed. Information presented below comes from the project archives and from my own work as the Development Control archaeologist for Suffolk County Council's Archaeological Service (SCCAS). I took responsibility for overseeing the excavation and follow-on projects on behalf of the County Council through the Brief and Specification for the PPG16 excavation and assessment (Fletcher 2006c). I am also principle investigator and project manager for both the ALSF funded Suffolk Rivers Valleys and the English Heritage Beccles projects.

In summary, the archaeological components of the Beccles excavation can be summarised in four main areas.

- The monument and its archaeology, including the excavation data, which provides direct analysis of the surviving site components.
- The 'on' and 'off' site palaeoenvironmental and geoarchaeological sequences.
- Extensive specialist analysis including sub-surface topographic modelling, water table analysis and soil geochemistry.
- A targeted research proposal, designed to establish an understanding of the base-line conditions for *in situ* preservation, and establish the most appropriate site management.

Site description

The site is on Beccles Town Marshes, (NGR TM29156413), an area of extensive river flood meadows and grazing marshes, situated a little under 1 km north of Beccles in North East Suffolk (see Figure 8.1). Beccles itself is a small market town located on the southern valley side of the River Waveney which flows west-east towards Lowestoft and the North Sea. It is centred on a higher ridge of land that extends north into the River Waveney. A meander of the River Waveney also flows proximally to the western margin of the town, tight against the ridge of higher land on which the town is situated. Small valley tributaries are present to the east and west of Beccles, flowing north from the higher ground into the River Waveney. The river also forms the

county boundary between Norfolk and Suffolk and is an improved channel, first made navigable by an act of parliament in 1722 (Robertson 1999:130).

Early maps, such as Hodskinson's Map of Suffolk, show that the Beccles Marshes were still undrained common land in 1798 (Dymond 1883). By 1838, at the publication of the 1st Edition Ordnance Survey 6" series (SHER records) the marshes are depicted as ditched and drained (see also Figure 8.4 below). The land, prior to being formally drained was known as Beccles Common, and later Beccles Marshes. The navigation act appears to have been the catalyst for the reclamation of the floodplain grazing-marsh and the 'taking in' of common land along the riverside. The embankment, and insertion of locks to control the tide, created enclosed parcels of land for which the water table could be controlled and subsequently drained. The common rights reverted to the Town Council, which still manages the land today on behalf of the town. Currently, the land use ranges from rough grazing, improved pasture, allotments, to amenity land (e.g. Beccles Amateur Yacht Club). Some areas are semi-derelict. The land is grazed by a local tenant farmer.

The soils are recorded as deep fen peats and silts of the Mendham series, with underlying riverine deposits of sands and gravels of the Newport series. This was confirmed during the archaeological investigations, and sequences of floodplain peat deposits were revealed which vary in thickness from 2.50 m to 7.00 m (Gearey *et al*., 2007). The sands and gravels form small islands along the southern side of the river Waveney, some of these are submerged below the surface of the floodplain. Modelling of the floodplain deposits as part of the most recent research has identified that some of these islands, particularly those buried under shallow peat deposits on the edge of the floodplain, would have been above the water table during the prehistoric period when river and tide levels were lower (Chapman *pers comm*.). One end of the post alignment appears to terminate on one of these submerged islands. Further along the floodplain to the northeast of Beccles, marine alluvium dominates the sequences, due to the tidal influence on the river system prior to the Waveney Navigation (see Alderton 1983).

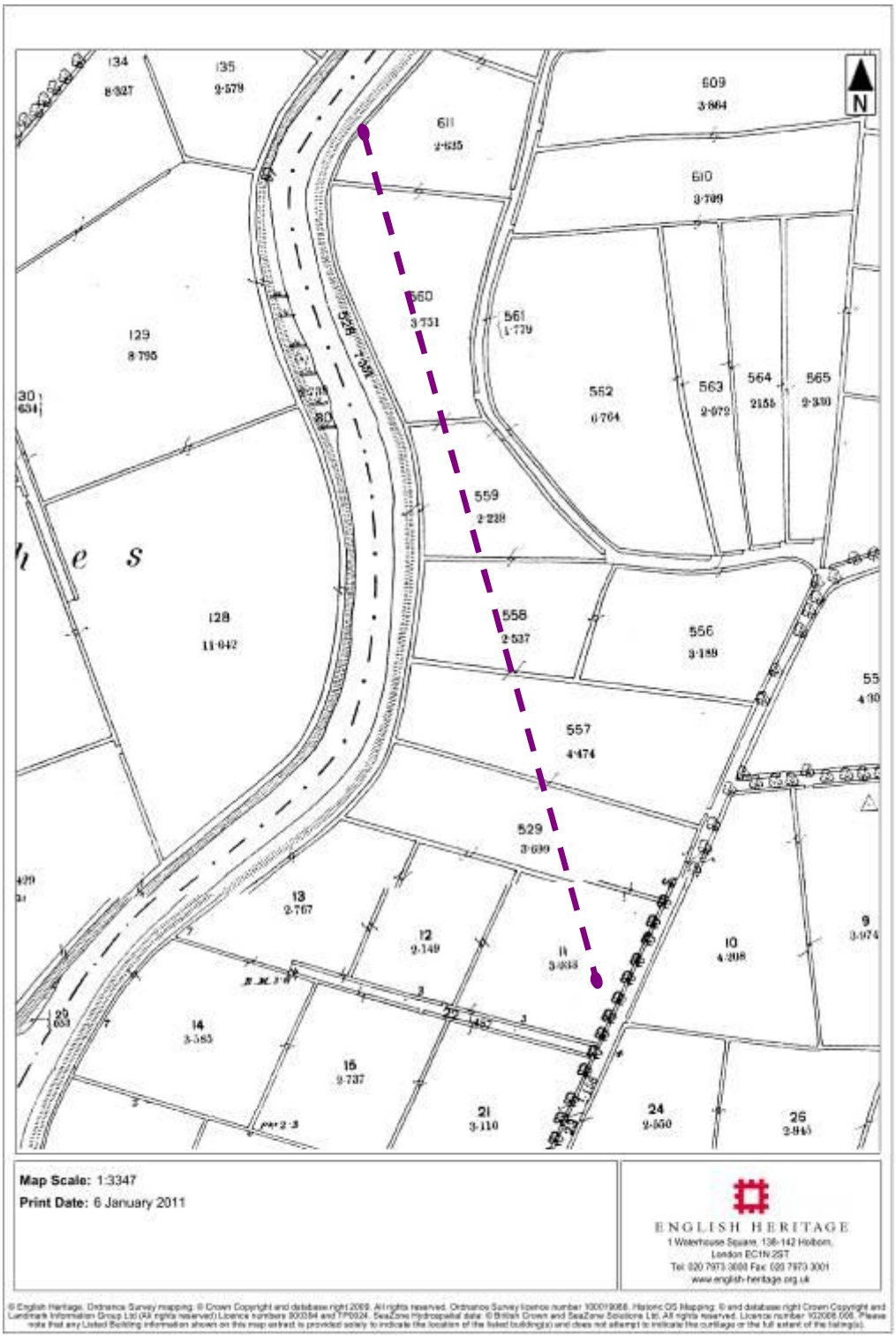

Figure 8.4 *Historical OS map c, 1887 showing the drainage pattern. The approximate line of the trackways is indicated by the dashed line (English Heritage)*

Beccles Marshes had not been the focus of any previous archaeological investigation, and the Suffolk Historic Environment Record (SHER) reveals that no finds or sites have been reported from the area of the post alignment in the past. In fact, with the exception of a Palaeolithic hand-axe that was dredged from the River 1.5 km northeast of Beccles, and Neolithic flint tools which were recovered from the building of the A416 to the south, there are few notable prehistoric finds from the area at all. This is in part due to the undisturbed nature of the site. Until the recent flood defence work there has been little or no large scale development in this part of the Waveney valley. The largest archaeological excavations in the areas were necessitated by large-scale sand and gravel extraction at Flixton, some 12 km to the west of Beccles (Boulter *in prep.*).

In term of research, a literature review undertaken for the Suffolk Rivers Valleys Project revealed a similar dearth of published works from Suffolk as a whole, with only a small number of known projects having been undertaken in the past (see Hill *et al* 2007). In the Waveney valley, for example, there is one recent doctoral thesis with a Holocene theme (Alderton, 1983). Likewise, in terms of preserved organic archaeology, only one site to date has produced worked wooden timbers, and these are Romano-British in date (Ashwin and Tester *in prep*). In terms of precursors to the Beccles site, there are no Iron Age finds noted in the area, and no indication from any previous records that a site like the Beccles post alignment existed in the Waveney Valley, or the wider Broadlands. In fact, with the exception of the Roman timbers at Sole, preserved wooden archaeological structures on any kind are relatively uncommon in East Anglia, outside of the fenlands. This site is therefore not only unusual in its location but has significant research implications outside of the region. The Beccles site, in common with other wetlands monuments such as Flag Fen, has not been scheduled.

Archaeology

2006-7 excavations (see Figure 8.5)

The full range of material from the 2009 excavations has not yet been fully processed. The bulk of the analysis presented here therefore relates to

the two seasons of excavation in 2006-7 and is a summary of the work presented by Gearey *et al* (In press).

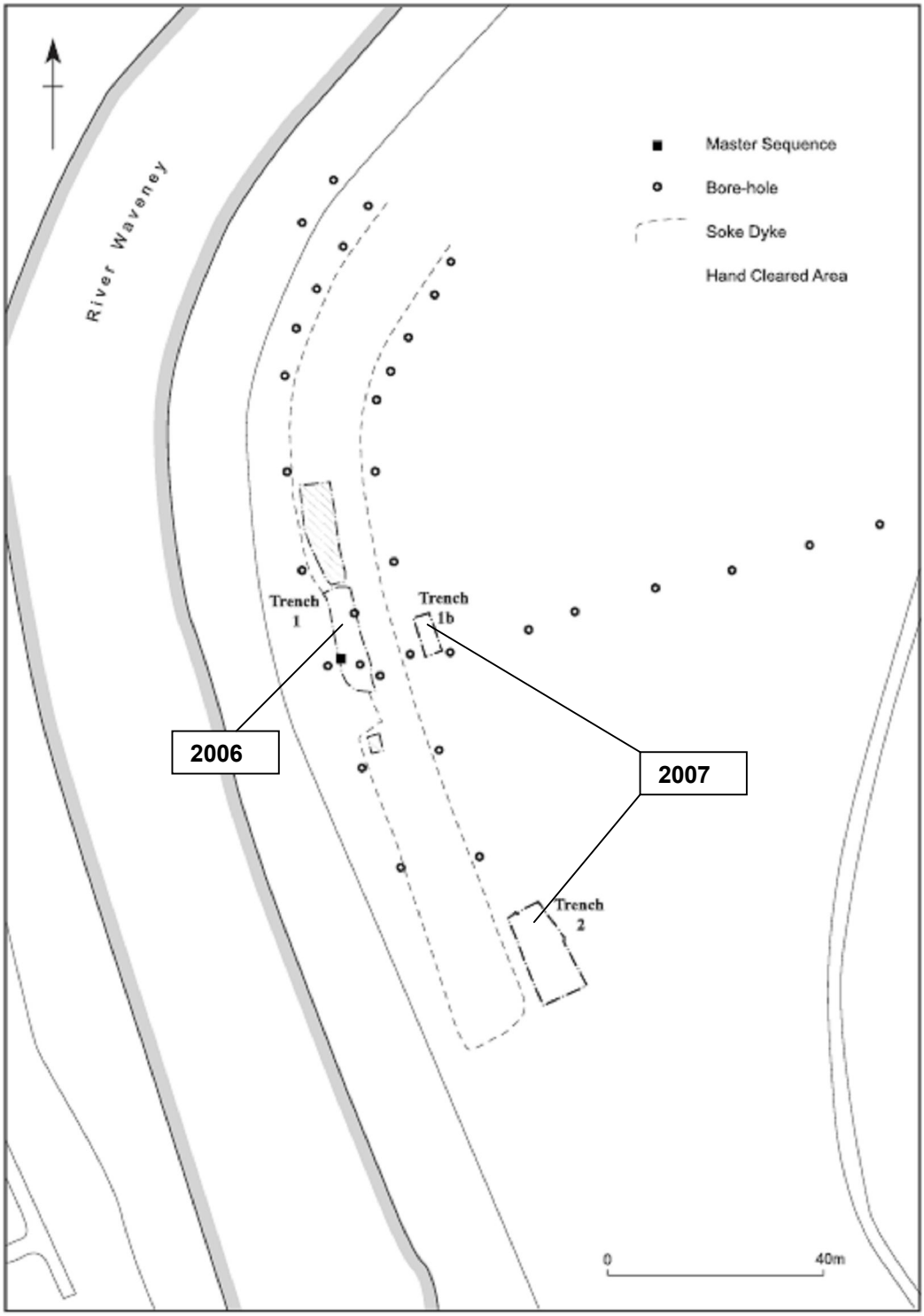

Figure 8.5 Plan showing trench locations from the 2006 and 2007 excavations (from Gearey et al in press)

The 2006-7 excavations recorded a total of 67 upright Oak (*Quercus*) posts and two of Alder (*Alnus*), of which 26 were sampled. The posts are aligned north-west to south-east and run over a distance of 400m, sealed by an upper peat unit (see below, Table 8.4, Unit 1). All posts were shown to be complete roundwood timbers, and eleven had bark present. All were unmodified in section, except for the base where their tips had been trimmed into tapered 'pencil-point' ends. The well-preserved broad, flat facets were indicative of working using iron tools (Bamford *pers comm*. See also Thomas 2007: 95-101), as opposed to the more cupped nature of bronze tool marks (see Fletcher 1999).

The posts formed three discernable rows with an overall width of between 3-4m wide and 1.0m to 1.5m between the rows. Posts are either placed singularly, or occur as pairs or groups of posts, and range between 0.5m to 2.0m in length. The diameter at the thickest part of the posts also varied from 0.14 – 0.26m, which shows a relatively uniform selection of materials, and appears to represent deliberate selection of materials. Overall, the even diameter of the posts, and slight curve to the base of the posts, are indicative of the use of coppiced material throughout. The approximate maximum post lengths are estimated at between 1.83–5.88 m which equates to a possible height visible above the original ground surface of between 1.22–3.92m. A number of the posts have evidence of cross-halving joints. Three of these had *in situ* lateral wooden cross bars. Additional samples of wood, including timber, round wood and wood working debris were found within the peat matrix, but concentrated within the alignment. Some natural *in situ* coppice stools and roots were also present.

Two additional brushwood structures were identified within the excavations. The first was a concentration of small diameter coppiced alder (*Alnus*) rods, laid on an east-west alignment, perpendicular to the main post alignment. The positioning of the rods indicates that they may have formed a bundle, secured in place with three stakes driven into the ground. The second structure was identified at the north-western end of Trench 2, again perpendicular to the main post alignment. This feature consisted of eight lengths of coppiced roundwood, and again indicated a bundle of faggots that had been pegged into place using short roundwood stakes. Associated with

this bundle was a small tangentially split oak plank, with a small, square hole in one end, into which a tangentially aligned ash (*Fraxinus*) peg had been inserted to secure the plank in place. The crude construction of both these features suggests the structures were short trackways lain down to bridge patches of wetter ground during construction of the feature or during its subsequent use.

In term of dating, dendrochronological samples were taken from 28 of the upright posts, 12 of which cross-matched. Analysis indicated a 1st century BC date for this group with the composite sequence dated to between 157-76 BC. A total of 11 samples had bark and the felling date of all these timbers was determined as the early spring of 75 BC. Because the dateable timbers were dispersed throughout the length of the structure, it is likely that the original construction event took place in that year. Radiocarbon samples were also taken from the two brush wood trackways. A comparison of these dates with the results of the dendrochronological dating of the posts revealed statistical inconsistencies, which would indicate that they were built at different times. It is likely that the structure in Trench 1 was constructed before, and the feature in Trench 2 after, 75 BC.

Aside from the posts, a considerable amount of worked wooden debris was also recorded from both trenches. This was concentrated in a spread of material around the posts, thinning towards the edges of the site and the post alignment. Of the samples recovered, 75% were in a form of material classified as woodworking 'debris', with 'roundwood' pieces accounting for a further 21%. A much smaller group of defined timbers was also present. This group included two items which were identified as artefacts: one, a rough dowel fashioned of oak (*Quercus*) sharpened at one end to a blunt point, probably part of a handle, and the second, a small, well-finished item of unknown use, with a recessed mortice in each end. Of the debris, most was woodchips. Research has indicated that trimming posts *in situ* could have produced as many as 800 chips per post (see Sands 1997). The amount of debris present at Beccles could indicate that at least some of the posts were pointed, shaped and trimmed on site. High numbers of radially aligned and square cross sectioned woodchips also indicate waste from more complicated

wood working techniques such as the planking and splitting of timber and is also present in the debris scatter (Bamforth *pers comm.*).

A fully integrated excavation and sampling strategy was employed from the beginning, and a research agenda was maintained throughout the project; thus proving that it is possible, even within a developer funded excavation, to undertake a research excavation; and that a specialist-led approach is viable in funding terms. The success of the first phase of work provided a strong platform on which to base subsequent research proposals.

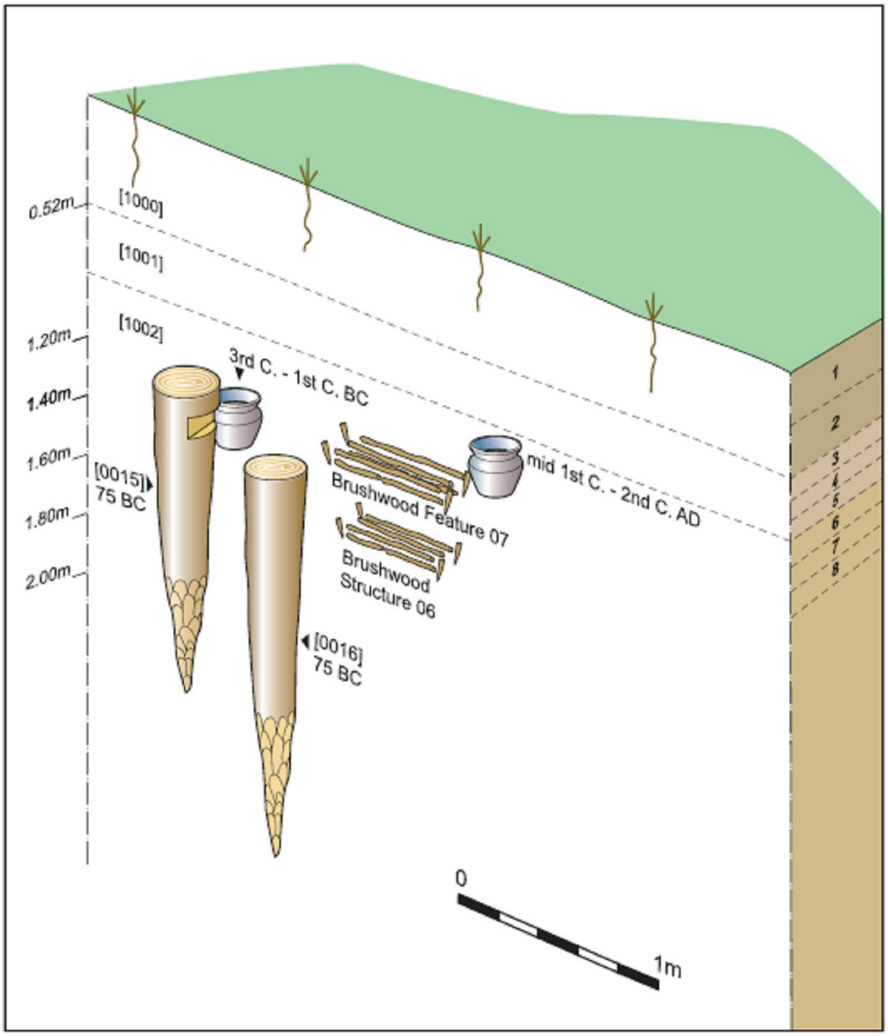

Figure 8.6 A summary of the archaeological finds from the Beccles post alignment in 2006-7, shown as an isometric projection (From Gearey et al in press)

During the 2006 excavation, a number of small and abraded pottery sherds were recovered, completing a small assemblage of Iron Age pottery forms with one rim present, some burnished wares and a number of body sherds displaying and incised decoration. Flint tempering, more common in earlier Iron Age assemblages, was not present here which gives a mid to later Iron Age date to the collection (Tester & Goffin *in press*). Pottery was also recovered from the 2007 excavation; however the forms here were more likely to be associated with a Roman context.

2009 excavations

As part of the last phase of work a further five trenches were excavated. This work has extended the extent of the post alignment to over 400 m in length. Its known extent now runs from the riverside where it appears from under the flood defence, to the edge of the floodplain. The alignment displays consistency in form through its length. These posts were also surrounded by a rough platform of preserved timbers. This varies in density and composition along the length of the alignment, but consists mainly of working debris. In places, the debris scatter can be seen to extend up to 2.0 m on either side of the alignment. The scatter of material is notably more complex and denser towards the dry land, where more defined debris can be found. In particular, arrangements of planks and small brush wood trackways were recorded and are similar to those described in the 2006-7 excavations. No further pottery or other finds have been identified, and no associated metal work has been recovered.

Phase	Activity	Date	Evidence
1	Construction activity, consisting of debris and assemblages of organic material. Some evidence for better defined brush wood structures	Late Iron Age	Preserved material recovered during excavation. Radiocarbon dates suggest brush wood trackway is statistically earlier, but still is Iron Age
2	Construction of the main post alignment. Posts and debris scatter	Late Iron Age (spring 75 BC)	Posts consistently dated by Dendrochronology. Analysis of woodworking shows the marks of iron tools. Other finds of pottery with LIA forms
3	Continued use of the site	late Iron Age - early Roman	Finds of pottery with known Roman associations and forms

		period	

Table 8.13 A summary of the interpretation of archaeology and site phasing

8.3 Palaeoenvironments and the history of palaeoenvironmental analysis

The landscape and palaeoenvironmental context of the Beccles Marshes and the Waveney Valley have been poorly explored and understood. Little work had been undertaken prior to the Beccles excavations and the Suffolk River Valleys Project. Now this area is one of the most comprehensively sampled palaeo-landscapes in East Anglia. Furthermore the Suffolk Rivers and the Beccles work combined represent one of the most extensive geo-archaeological surveys and research to be undertaken in East Anglia since the Fenlands Survey. The project has also recorded and published the first palaeoenvironmental sequences from Suffolk in the modern era.

The resource here includes both on and off-site waterlogged sequences, and an additional on-site organic component which includes wooden posts, timbers and woodworking debris. The on- and off-site palaeoenvironmental deposits are essentially the same, and these are floodplain deposits in the Waveney valley which have accumulated over time. These have built up in response to external environmental factors and changes in the river's base levels.

From the outset, the Beccles excavations used a sampling strategy which created a fully integrated evaluation of both the archaeology and the associated deposits. This, like the project designed for the work at Sutton Common (see Chapter 7), allows the relationship between the site and its local environment to be developed, and places emphasis on integrated methodologies. The difference between floodplain environments and small localised lowland mires is, however, considerable, and this presents a number of difficulties. Most importantly the floodplain at this part of the Waveney is, and has been in the past, a very complex and dynamic environment. The sequences show that the factors which influenced the overall base level rise include sea level change, tidal incursions and increased sedimentary loading

from overland run-off. The nature of the post alignment, and the way it was imposed onto the floodplain also changed the relationship between the archaeology and its palaeoenvironmental context. The floodplain continued to operate as a natural system before, during and after the development of the post alignment, and after it had fallen out of use. The building event in effect relates to a point-in-time within the sequence (see 8.3 above).

2006 Excavations (see Figure 8.3 above and Tables 8.2 and 8.3 below)

The on-site palaeoenvironmental analyses from the first two seasons of the excavations focused on the creation of a 'master sequence', taken from the baulk of the excavation trench from 2006 (Gearey *et al* in press). Off-site records were collected from a programme of coring undertaken as part of the excavation, but the information was supplemented with sampling work undertaken as part of the Suffolk River Valleys project (see Hill *et al.* 2007 and 2008). The analysis focused on diatoms, plant macrofossils, coleoptera and pollen. However, during the assessment stage of the first excavation, it was found that the preservation of pollen and the plant macrofossils was extremely poor. No further work was then undertaken on these proxies in later phases. Beetle remains were, by contrast, very well preserved and the reconstruction of past environments focused on this indicator (see Table 3). Poor preservation conditions for pollen were again noted during the following season of excavation, and were also a feature in the Suffolk Rivers Project analysis of the Waveney sediments. Moreover, problems were also identified with radiocarbon dating. The on-site master sequence, for example, does not have an independent chronology, because the radiocarbon dates were unreliable. Similar problems were also identified with deposits radiocarbon dated during the Suffolk Rivers Project (see Hill *et al* 2007). This resulted in a significant re-assessment of the dating methodology used by the project and a re-interpretation and re-publication of the dates (e.g. Hill *et al*. 2008 and Howard *et al* 2009).

In summary, the floodplain sequence adjacent to the northern end of the site is about 5.5 m deep, onto sands and gravels. The five main stratigraphic units are described in Table 8.2 (below) after Gearey *et al* (in press). North from the post alignment towards the current course of the River

Waveney, the deposits become more minerogenic and the peats give way to grey-brown/blue-grey organic-rich silts and clays, indicating the presence of channel deposits. The course of the river appears to have changed little over the later part of the Holocene, with a steady accumulation of sediments and with channel deposits adjacent to the current river. Along the course of the post alignment,, going south towards Beccles the floodplain becomes shallower and gives way to a subsurface dune landscape of undulating and submerged sand and gravel islands. It is currently thought that the submerged sand island to the north of the post alignment provided the landfall for the feature and this land surface was submerged by the accumulation of later post-Roman deposits.

Depth	Unit	Description
0.00-0.90m	Unit 1	Dark grey-brown herbaceous well humified slightly silty PEAT
0.90-1.00m	Unit 2	Light grey organic rich SILT
1.00-1.90m	Unit 3	Dark grey-brown herbaceous humified slightly silty PEAT
1.90-4.50m	Unit 4	Dark red-brown herbaceous humified PEAT with wood fragments
4.50-5.50m	Unit 5	Dark brown-black very well humified PEAT
> 5.50m	Unit 6	SANDS and GRAVELS

Table 8.2 Summary of the off-site floodplain stratigraphy at Beccles (after Gearey et al in press)

The on-site master sequence (Figure 8.5 and Table 8.3) was taken from the trench edge, immediately adjacent to the post-alignment during the 2006 excavation. The analysed undertaken on this sequence was more detailed. The basal sample (Unit 3) pre-dates the main phase of archaeological activity on the site, whilst the three middle samples (Unit 2) are closely associated with the archaeological activity. The concentration of archaeological wood in this unit provides a direct link, and the age-depth correlation between the on- and off-site data confirm that the lower sample from Unit 2 does dates to the Iron Age. The uppermost two samples (Unit 1) are from the peat unit which seals the archaeology and forms the uppermost sediment unit across the floodplain.

The sequence shows that a series of changes took place in the floodplain vegetation before, contemporary with, and after the main phase of

human activity on the floodplain. Before the construction of the post alignment, the coleoptera indicate a wet sedge dominated environment with areas of open water, but with alder (*Alnus*) and pine (*Pinus sylvestris*) in the background, presumably present on the edge of the floodplain. Dung beetles point to the presence of large herbivores nearby, although it is not known if these were domesticated or wild species. Subsequently the environment appears to become dryer, giving way to a low growing, tussocky sedge fen, with fewer aquatic beetles present in the samples. This is followed by another period of increased wetness. The numbers of dung beetles fall, and a *Phragmites* swamp is present, surrounded by deeper areas of open water.

The sample from 0.74-0.85m appears to equate to the earliest phase of archaeological activity, and worked wood debris is present within the sample. The environment at this time is a sedge fen with open pools fringed by tall reeds. The presence of the common woodworm (*Anobium punctatum*) in this part of the sequence appears to show that dry, seasoned timber is present close by. Presumably, this reflects the closeness of the post alignment. A sedge and wet grassland environment is indicated towards the upper part of the sequence, and this relates to the continued peat accumulation after the post alignment had been built. The indications are that although peat continued to form, the local environment was drier.

Depth/ (Unit)	**Stratigraphy**	**Coleoptera Samples Depth (mOD)**	**Inferred Local Environment/** Beetles recorded
0 (1)	*Dark red-brown well humified herbaceous peat with wood fragments and rootlets. Occasional silt-rich clasts*	0-0.25m (-0.67 to -0.92) 0.25-0.50m (-0.92 to -1.17)	**Grassland -Reedswamp-Sedges-Muddy Pools** Grass feeding ortoperid *Corylophous cassidoides*, reed beetle *Plateumaris braccata,* large numbers of the Curculionidae *Apion* spp. and *Sitona* spp. associated with disturbed grassland and pasture **Dry Grassland-Muddy Pools** Similar taxa to 0.50-0.62m
0.52m (2)	*Light yellow brown (oxidising to grey-brown) very silty, well humified peat with abundant monocot remains and occasional small flint fragments. Occasional fine grey sand layers*	0.50-0.62m (-1.17 to –1.29) 0.62-0.74m (-1.29 to –1.41)	**Dry grassland-Muddy Pools** Hydraenid family (hygrophilous taxa), particularly *Hydraena* spp. and *Octhebius* spp, mud at edge of shallow pools **Grasses and Sedges-Tall reed Swamp-Deeper Pools** *Plateumaris braccata* (reed beetles), and sedge feeding Curculionidae *Thryogenes* spp. and *Notaris acridulus* found on sweet grasses (*Glyceria* spp.) Dytiscidae *Hydroporus* spp. and the Hydrophilidae family

		0.74-0.85m (-1.41 to –1.52)	**Tall Reed Swamp-Pools** *Plateumaris braccata* (reed beetles) dominant. The anobid *Anobium punctatum*, (common woodworm) present
0.86m (3)

evidence of modification and species was also collected. It has also been indicated from the 2006-7 series that it may be possible to determine the presence of coppiced material from the assemblage. This will also be further explored through the 2009 samples.

A summary of the on- and off-site material present at Beccles is given below (see Table 8.4).

Deposits/ Scale	Summary
On site	'Master' sequences, well preserved stratigraphic samples taken from the trenches excavated along the line of the site, and used to provide palaeoenvironmental information in relation to the archaeology and also a topographic model of sub surface topography. The other resource is the wooden artefacts, in particular the posts, wood working debris, planks and reused organic material
Off site	On- and off-site palaeoenvironmental sequence interchangeable due to the floodplain location, but wider coring provides a model of floodplain development, the influence of sea level change in the North Sea and sequences for environmental reconstruction

Table 8.4 Summary of palaeoenvironmental deposits present at Beccles

8.4 History of Archaeological Management

The post alignment, at just over 500m long, is presently under a variety of different land uses. One end is located adjacent to the river, with the first 100m of the alignment situated under the river embankment, and between the bank and the soke dyke (see Figures 8.2 and 8.3). The next 400 metres runs under Beccles Common, over half of which is in the ownership of the Town Council. This is known to have been common grazing land since enclosure (Beccles Town Council, *pers comm*.). No ploughing has ever been recorded, although the pasture has been improved through drainage and the addition of fertilizers. A further section of the land above the alignment is leased by the Beccles Amateur Yacth Club. It is used as amenity land, with a club house and riverside plot on which boats are stored, and over-wintered. The southern end of the post alignment is under rough derelict pasture, and further along the alignment are allotments, although the post alignment is thought to terminate before it reaches these. The rough pasture is not currently managed or farmed in any way. The allotments are also owned by the Town Council and plots leased to Beccles residents.

As discussed previously, Beccles Marshes remained unenclosed until the early 1800s and was part of a significant area of floodplain land which came under water table management after the canalisation of the Waveney. Map analysis first shows the site as unenclosed c. 1798, and then by 1822 as a land parcel with the straight drainage lines and regimented grid pattern which typify reclamation of the period. Beccles Marshes and landscape have, however, largely escaped development pressure and urban expansion. Furthermore, being in town land the marshes have also remained relatively untouched, with little or no change in the farming regime.

Land enclosure introduced the first consistent drainage ditches and land division across the common, and it brought the land under agricultural control. It is likely that the land drainage will have had a significant impact on the site in the first instance; however over the long term stability in the local environment contributed to a stable burial environment. The effectiveness of the drainage was still likely to have been of limited value and the land remained relatively unimproved. Maps from 1822 onwards show that the land was liable to flooding, and was likely to have been seasonally wet and waterlogged for much of the year. This is a situation that is likely to have continued until recently, and would have led to stability and a good preservation environment. The current water table is being modelled as part of the new project. However, anecdotally at least, the upper layers are now all but permanently dry. It is likely that changes, in particular a recent lowering of the base water levels in the marshes, reflect more widespread changes to the East Anglian water table, and a general draw down of water from the river to supply irrigation further upstream. As noted in previous chapters this also reflects a background trend towards intensification in the post war period.

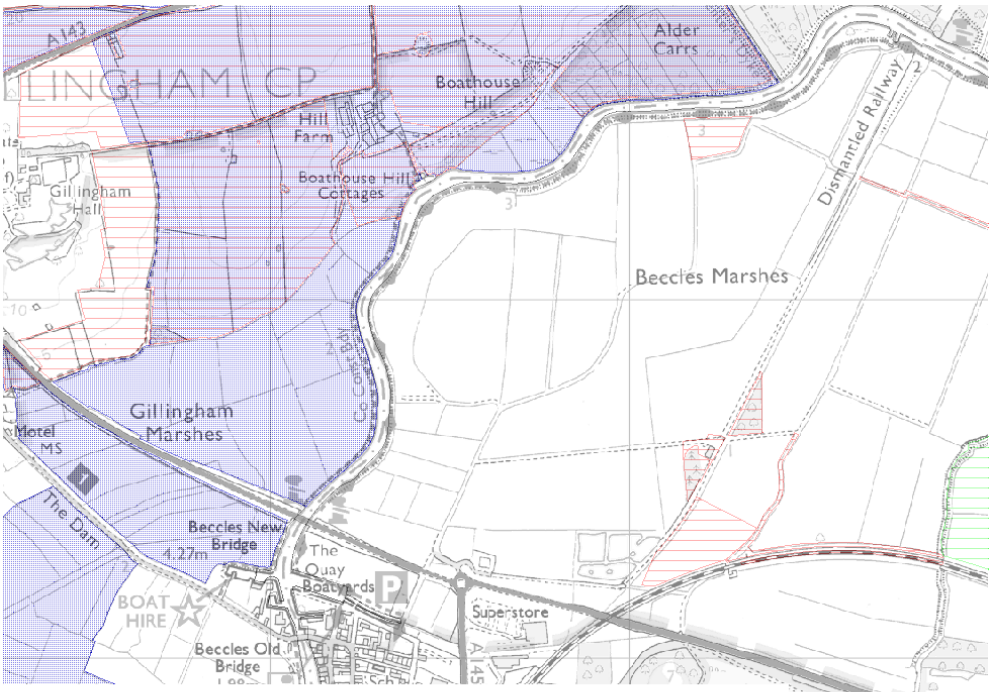

Figure 8.7 Magic maps (North to the top). Current areas of active management c. Nov 2009 (from www.magic.gov.uk) [Key: Blue = Countryside Stewardship agreement, Red = Entry Level Stewardship]

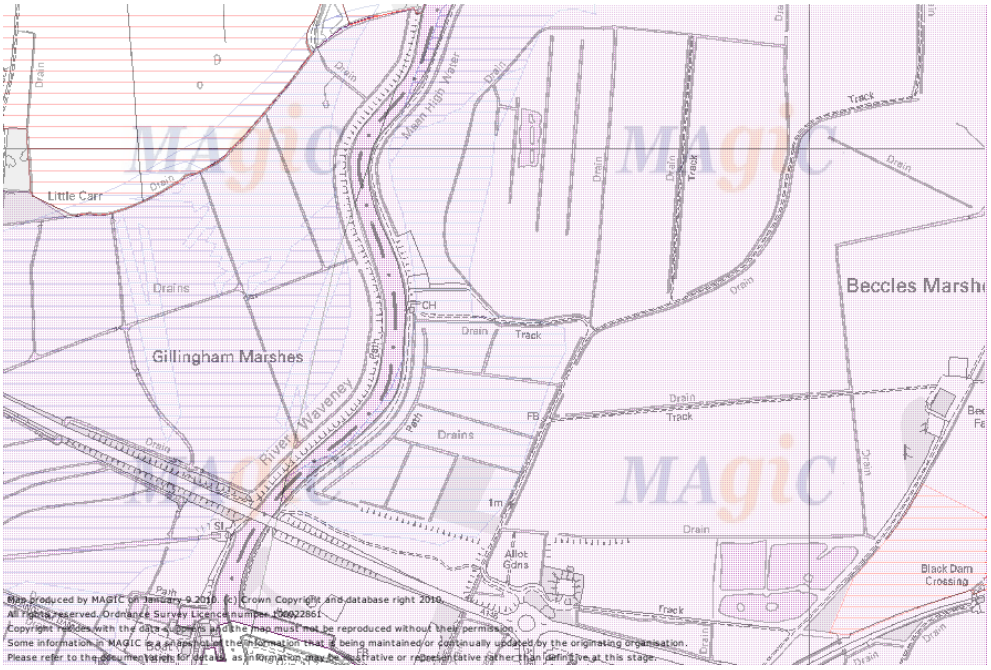

Figure 8.8 Magic maps (North to the top). Current areas of active management c. Nov 2009 (from www.magic.gov.uk) [Key: Horizontal hash – coastal and floodplain grazing marsh, Light purple = Environmentally Sensitive Area, Red = Entry Level stewardship]

The marshes are, however, now designated by Natural England under the Environmentally Sensitive Areas scheme (see Figure 8.5 above), which affords such areas an opportunity to claim grants for favourable management. It also highlights that this is a wetland environment and that the preferred management for ESA lands to achieve a conservation gain is to keep or revert land to pasture. This can include wet grassland habitats, and can also allow for increasing the wetness of an area of land, through the raising of water tables. Furthermore in conservation terms it has been recognised as 'coastal and floodplain grazing marsh' habitat (see also Figure 8.5). This is a recognisable habitat and land use type which Natural England have identified as scarce and that English Nature would want to increase.

The site at Beccles has therefore largely escaped direct impacts from agricultural intensification, arable conversion, and improved drainage, but it has been affected to a lesser degree by general changes to the local environment which reflect more widespread environmental and social changes. The landscape is recognised as important by Natural England, but has not to date benefited from environmental stewardship (see Figure 8.4 above). Management has therefore been an entirely natural and passive, and has been relatively benign until recent lowering of water tables. The more recent changes, if borne out by the 2009/10 research, may indicate that this equilibrium is no longer valid and the site is at threat from long-term desiccation. Just how much of the site is threatened, which layers, and how deep the desiccation will go on a vertical axis is a focal part of the upcoming research.

Overall however, the archaeological excavation and palaeoenvironmental research to date has proven the potential significance and value of the site. Important organic artefacts and archaeological remains are therefore at risk. The conditions required to protect the most sensitive of

those archaeological deposits, in particular the ones nearest to the surface, currently does not exist. This includes the upper parts of posts, and also appears to be affecting the layers of Iron Age wood working debris that forms the bulk of the archaeological material between the post alignments.

The 2009/10 research focused on depth and preservation, and has also closely followed the research undertaken at Sutton Common. The aim was to assess the vertical structure for preservation, and to assess the vulnerability of the stratigraphy. The results are currently being analysed, but it is hoped that they will be able to draw further conclusions about the future management of the site, with the ultimate goal of providing a prescription for its long term management. The results known to date, however, suggest that the preservation of the archaeological site at Beccles may be more complex. Land use, the depth of encasing peat deposits along the length of the alignments, hydrology and depth of the buried remains are all factors that will need to be explored. The lack of pollen preservation in the floodplain sequences, for example, suggests that certain anomalies already exist in terms of the water chemistry and the state of the peat. Vertical root penetration is another recorded problem.

8.5 Implications for Management

The plans developed for Sutton Common and other wet archaeological sites as part of the Heritage Management of England's Wetlands have been used as a reference to establish the main management implications (Fletcher 2003 and Fletcher and Van de Noort 2004). The headings are comparable with those management plans, and therefore also compatible with the two previous case study chapters (see Chapter 6 and 7).

The fragility of the archaeological resource

- The importance of material recovered from wetland archaeological sites and from wet context has been proven to be of considerable value to aid our understanding of material culture and of past environments. In this case where it is material from the Iron Age, there is a considerable value when viewed against similar material from the region and elsewhere. Research undertaken at Beccles follows that at

Sutton Common and has shown again what can survive in the way of waterlogged Iron Age finds, and just how valuable this material can be. This includes waterlogged organic artefacts, such as posts, or worked wood and also the palaeoenvironmental deposits. The potential for the recovery of such material and its value as archaeology is therefore considered to be high.

- Organic archaeology and its components are amongst the most fragile and sensitive of all archaeological materials. The rarity of the organic material at Beccles, its date, and the proven value of the site in archaeological terms makes this a very important archive. The preservation potential for the organic archaeology has not yet been fully understood, however the ground conditions are not the same as those that existed at the time of burial. A combination of lowered water tables and agricultural improvements has had an adverse impact on the preservation of peats in the upper horizons and also the higher archaeological layers. No attempts have been made to reverse the drainage in order that structural timbers, organic finds and the archaic peat will survive. Because the hydrology has been altered over a period of time, preservation *in situ* may not be feasible, although research is underway to determine whether this is possible. Raising water tables and rewetting may be still possible, but it is possible that preservation by record may yet be a required outcome.
- The issues for preservation include ground water contamination, nitrate input from floodwater run-off and possible chemical contaminants in farming residues. Because this is a linear site, differences along its length are expected: in particular, a diversity of land uses along the surface, and variations in the sub-surface topography, burial environment, the levels of humification and the composition of the peat soils. Water chemistry and flow of water below ground are also issues. On the surface, a different set of variables are present, including mixed surface soils, changes in farming regime, nutrient loads, rainwater run off and absorption, land cover and patterns of use.

- The deepest parts of the site, in particular the tips and points of the posts which have remained fully waterlogged and well buried, are likely to be the best preserved and will survive the longest. A water table fluctuating on a vertical axis creates an intermediate zone of variable and declining preservation. For vertical linear structures (e.g. *in situ* posts) this creates a vertical preservation situation, where the base is well preserved, the top is poorly preserved, and the middle section is only partially preserved. The status of this middle section and the depth of the desiccation is dependant upon how long the post has been subjected to fluctuating water tables, and how much they fluctuate. Chemical loading and the other external factors mentioned above may accelerate this decay.

Access, boundaries and site ownership, and maintenance of drainage

- As discussed previously, because the site is linear in form and situated in a large floodplain, the issues of access and ownership are complex. Moreover the drainage affects many more stakeholders in the local catchment, as the floodplain deposits extend across a large area. In order to safeguard the on-site resource it may be necessary to look outside the site and to involve wider co-operation across local ownership boundaries. Conflicting land use has not yet been an issue for the site, but it is increasingly possible in the future, particularly if a rise in the water table might adversely affect the current land users.
- It may not be possible to raise the water table further without substantially affecting neighbouring areas. Although designated ESA and classed as a rare habitat, it does not necessarily follow that the current landowners will follow the nature conservation advice for these areas. If action is required to preserve the site, agreements from all site owners with the natural environment groups will be necessary.
- Drainage is controlled by the external bodies such as the Internal Drainage Board (IDB) and the Environment Agency. Likewise water abstraction from the river is controlled by the Environment Agency, and

ground water abstraction by the various water companies. Agreements would be needed to alter the drainage environment

Conflict of interest

- Conflicts of interest here at Beccles are not as clear cut as for other sites. Agricultural practice may, however, adversely affect the management of the archaeology. A largely benign and passive management regime has so far ensured that the site has been preserved and as far as can be ascertained, no ploughing has taken place along the length of the site. The site is however, during the summer season much dryer now than it was in previous decades, and the current preservation environment is not as good as it was in the past. This presents a potential conflict between archaeological needs and the preferred farming regime of the current land user.
- The site is a candidate for scheduling and this also has the potential to present conflicts of interest in the future. If the site was scheduled and protected under statutes, its needs would have the potential to conflict with land ownership, land users and would also affect future plans.
- The land is designated as an ESA target and is accessible to grants for Natural England's Entry and Higher Level Schemes. Changes may be required to the farming regime to gain entry to HLS or ESA, which could conflict with the needs of the archaeological site. The options in the schemes for this type of landscape do have the potential to provide beneficial outcomes for multiple objectives, including wildlife and archaeology.

Knowledge and research

- This site has been systematically excavated, and is part of a research programme which includes an assessment of preservation and water table modelling. This work has considerable implications for the site and it has ramifications for other wetland sites in East Anglia or further afield. This work needs to be completed and the results disseminated.

- The research and analysis at Beccles have benefited considerably from the Sutton Common project. Research should continue to be a priority for the archaeological community, as future work will continue to inform and benefit research on other sites. Priorities should be to identify areas where research is lacking, and to ensure results feed back into future management. This wider focus should continue to involve inter-agency co-operation with integration of ideas to enhance the management plan and allow for aims and objectives to be critically assessed. This feedback will help inform future directions, strategy and policies.
- The work has not yet been fully published, and the full implication need to be fully disseminated and realised in policy terms. A management plan and funding may still be required.

Area of concern	Issue
Ownership	A linear site under multiple owners, and multiple land use.
Conflicting interests	Although land use is stable, archaeology preservation v farming is still an issue, and a potential future conflict Conflicts between public amenity and archaeology may be an issue. Pressure from conservation requirements is an increasing concern in the Waveney valley Drainage still remains a risk and is a competing factor. To improve the management of the site would require a higher than present water table which conflicts with the land use
Fragility	Wet artefacts and deposits affected by de-watering and desiccation
Research/knowledge	On-going research provided key knowledge on wet sites, although wider dissemination and 'lesson learning' still an issue

Table 8.14 Showing summary of management issues

8.6 Research Agendas and Frameworks

There is no overarching agenda or framework specific to wetlands, and sites such as Beccles need to be assessed through other related documentation. In this case the relevant documents are:

- English Heritage's Strategy for Wetlands (Olivier and Van de Noort 2002 www.english-heritage.org.uk/upload/pdf/wetlands_strategy.pdf).

- East Anglian Regional Research Frameworks (see Glazebrook 1997; Brown and Glazebrook 2000); in particular the Iron Age sections by Bryant (1997 and 2000)

NB These documents are currently under review and the drafts that have been circulated to curators in the east of England region suggest that the study of wetlands may have a more substantial profile in the new documents. For the present the current and published documentation are the ones used for this analysis.

Beccles and the Strategy for Wetlands

The strategy for wetlands is for the most part an overarching document without specific reference points for dealing with individual cases on a site by site basis. The four main principles of the strategy (Olivier and Van de Noort 2002: 2) promote:

- Better management though practical conservation mechanisms
- Better research
- Better outreach
- Promoting of wetlands policy in the work of local authorities, national agencies and intergovernmental bodies

The work at Beccles has been strongly influenced by the Sutton Common project. As a working model, Beccles becomes an experiment for the application of the Strategy's principles, although better management of the archaeology has not yet been fully achieved because the project is ongoing. The current project research is set to deliver a methodology for the implementation of practical conservation measures. A multi-agency approach to the site has been established, through the project steering group, and agreements on day-to-day issues have been achieved through local negotiation. A research programme which includes water table and hydrological monitoring, and a lateral and vertical preservation assessment of the wood, are all designed to provide evidence to develop an accurate picture of the site's baseline conditions. This will enable a decision to be made about sustainability, and to develop a management plan for the future. It is hoped

that the research will enable a full understanding of the quality of the archaeology and its research potential. Water table and hydrological monitoring will establish the current preservation conditions.

The site has for a long time been managed in a passive way. The project and the researchers involved are, however, looking holistically at the site and will focus their attention on the archaeological resource and the wet component. This is a positive trend and is designed to lead to the proactive management of the site.

A major programme of outreach is currently being delivered through the Beccles Project, and the site is now held in high local regard. The work has engendered a considerable amount of local support, positive engagement and a sense of ownership. The site is now promoted through the Town Council, through local walks and an innovative interpretation panel has been sited on the flood bank with a view over the site. The site itself is not fully accessible to the public, although further work is planned to provide information at the site and in local museums.

The fourth point has also been achieved to some degree as a direct result of the work at Beccles. In learning from MAREW and HMEW, a better understanding of the value of wet sites and wetland archaeology amongst curators in Suffolk has been developed. This has been highlighted by the finds at Beccles and achieved through improved awareness of the value of wet sites. Research has been undertaken which is aimed directly at improving local knowledge amongst regional and local archaeologists, contractors and archaeological managers. Cited as particularly valuable was the work of the Suffolk River Valleys Project which provided a new knowledge base in the county (see Hill *et al* 2007, 2008, Howard *et al* 2009). The Beccles post alignments has, likewise, been helpful here in proving how valuable the wetland resource is. Those people who have been involved with Beccles and the Suffolk Rivers work are now more aware than most of the issues, but more work is required in this field to promote the results.

In addition, the strategy for wetlands also promotes: '….programmes of survey and excavation as an essential pre-condition for the development of successful management practices and promoting applied research to underpin good management of wetlands and to inform future policy

development' (Olivier and Van de Noort 2002). The work at Beccles has been strongly influenced by this. The Beccles project is in effect the development of a baseline study; it is underpinned by good quality research, and will lead to the development of a specific prescription for the site. Whilst the approach at Sutton Common may have provided the benchmark for future baseline studies, the work at Beccles has taken this one step further and is creating a bespoke management solution and outcome.

Beccles and the Heritage Management of England's Wetlands Project

Beccles was only discovered in 2006 after the completion of HMEW. The development of the research for the Beccles Project has been influenced by MAREW and HMEW.

Beccles and the Regional Frameworks

The Beccles site is in Suffolk and therefore, like Borough Fen, falls within the area covered by the East of England Research Framework. As previously mentioned, this framework does not have a specific wetland agenda or theme; therefore the site can only be assessed by a period as an Iron Age site or by location and context. The framework does, however recognise that the Iron Age in East Anglia is poorly understood, and that in terms of specific period based research the '…Iron Age of East Anglia has historically received generally less attention than other regions in southern England especially compared to Wessex and the Thames valley' (Bryant 2000: 14). Bryant also recognised that in East Anglia the key gaps in knowledge were in understanding Iron Age chronologies, economy and agriculture, industry, and settlement distribution, and also in the analysis and dating of pottery assemblages. The only place that wetland archaeology receives in the East of England framework is where it recognises that palaeoecology can play a role in understanding Iron Age economy and agriculture. In particular it calls for more '…analysis of dated sedimentary sequences such as alluvium, peats, and palaeochannel fills, which are immediately adjacent to known settlement sites' and more '…dated buried soils beneath dykes and other earthworks' (*ibid*: 16). It is clear from the excavations over the last few years at Beccles, and from its very location

within the floodplain of the Waveney, that it has a demonstrable wetland component. This site is proving to be a primary candidate in providing the information and research that the framework asks to be addressed. In particular, there are dated sedimentary sequences, material culture of Iron Age date and rare wooden structures. The site categorically can be dated to a key time right at the very end of the Iron Age. Known structures of this date are unusual and it is a key transitional period in the eastern region. The site continued to be used into the early Roman period and discovery of material culture here may help to understand changes in pottery and to help refine the dating of them.

Monuments such as this one are rare in East Anglia, and moving further afield, post alignments and causeway type structures are also scarce nationally. This site has both an important finds assemblage, which includes pottery and wooden objects and working debris, but also a significant riverine/floodplain sedimentary sequence. It has the potential to inform the understanding of the development of the local economy, and the importance of the rivers as boundaries and for transport in the Iron Age period; in refining cultural and ritual activity and in identifying trends which develop in the late Iron Age and continue on into the Roman Period. Results could also help develop studies of pottery and artefact chronologies. Wider analysis of the site such as that provided by the Suffolk River Valleys Project has also helped towards understanding settlement development in the region. It has provided information on environmental change, on sedimentary development and human eco-dynamics.

It is therefore a site with considerable research potential which conforms to those needs established by the regional research frameworks. A summary of how the Beccles site fits into the wetland strategy and the regional research frameworks are presented in Table 8.6 (below). Beccles has the potential to be a suitable candidate to inform the research that the East of England framework sets out to address; it has the ability to change the view of the late Iron Age in East Anglia. Furthermore it has potential to influence and form agendas, and challenge decision making.

Document	Sites priority as defined by each strategy	Potential of the site - key elements
Wetland strategy	**N/A**	Has all the attributes of a HMEW List 'A' type site, and a potential EH beacon site
Regional Framework	**High**	Rare IA preserved wooden structure. Contains important information on period for settlement patterns, dating and refining chronologies. Good on site sequences, inc. floodplain peats. Finds assemblage include pottery and other artefacts woodworking debris and preserved timbers

Table 8.15 A summary of priorities as determined by the relevant research agendas

8.7 MPP scoring and value

Beccles is a new site, and has as yet not been scheduled or considered for scheduling. It has therefore never been looked at in terms of assessment criteria, nor was it addressed under the MPP review process. The table below (Table 7) has been created using the MPP basic criteria. The assessment and score are based on information gained during the creation of this case study, and the score is demonstrated in a way comparable to those of the cultural value analysis below. In this instance, the MPP scoring has also been undertaken to see if the wetland components including location, setting, and potential might affect the outcome. The wet potential may add or detract from the site's value.

MPP Criteria	Assess ment	Score	Analysis
Period	High	3	Iron Age post alignments are rare across England, particularly one confidently dated to 75BC. Also in an area of the country (East Anglia) where the range and diversity of material culture from the Iron Age is known to be strong. Iron Age wetland sites are likewise uncommon
Rarity	High	3	Post alignments are rare across England; only five or six examples are known, although they all have different dates or functions. This site must be considered as exceptional, a triple alignment with an unusual construction method, date and a fully wet burial environment
Documen-tation	High	3	Only discovered in 2006, three seasons of excavation provide full baseline condition assessment, date and range of studied material. One publication in press, and a full monograph planned
Group Value	Medium	2	Other wooden finds e.g. Scole point to a grouping

			of wet sites in the Waveney valley
Survival/ Condition	High	3	Excellent preservation of wooden material including posts, wooden debris, off-cuts and artefacts. The survival of palaeo-environmental deposits was demonstrated to be only moderately well preserved. Pollen survival was for example exceptionally poor. Coleoptera were, however, well preserved. The site has been compromised in the past through drainage, but currently all the critical layers are preserved. Only a very small percentage of the 400+m long site has been exposed, the majority has been left *in situ*
Fragility/ Vulnerability	High	3	The wetland deposits are fragile, as are the larger organic artefacts. The site as a whole continues to be extremely vulnerable. Although not under pressure from arable agriculture, it is still at risk from decay caused by drainage, de-watering and desiccation
Potential	High	3	The informational value of the site has been demonstrated as huge. The scarcity of knowledge of sites like this has added considerably to the archaeological record

Totals	**Low = 0** **Medium = 1** **High = 6**	**20/21**

Table 8.16 MPP Criteria and scoring

The triple post alignment at Beccles is therefore an important monument and a valuable heritage asset. It could warrant being scheduled, although scheduling of wetland archaeological sites is controversial, and few fully waterlogged (including Star Carr or Flag Fen) have yet been protected in this way. The excavation work has enhanced the status of the site, and demonstrated it's potential.

If the MPP process is understood as an internal analysis, i.e. one which is based only on comparison with other archaeological sites, then it is difficult to make operational as few sites like Beccles are known. In rarity and period terms, the site is unusual and there are few sites like it anywhere in England of any period. It is also a fully waterlogged site and the site analysis suggests it is fragile and vulnerable. As in this case, wetland sites tend to be more vulnerable than other types of site of the same date and period. This is mainly because they rely heavily on the preservation of organic material for much of its informational value. The drying and desiccation of the resource can

devastate this information. The wet context does, however, mean that the site must be considered as having a higher value because of the range and scope of the information present. In this case the organic preservation increases the site's importance, but also increases its potential vulnerability.

8.8 Assessment of Cultural value

As discussed in Chapter 4 the analysis of archaeological sites for their Cultural Value is not regularly undertaken. If MPP is seen as internal or archaeology-only type of analysis, then Cultural Value is an external or comparable analysis of the value of archaeology against other items of cultural capital.

Value Type	Assess-ment	Score	Analysis
Aesthetic	Low	1	There is no visibility of the site above ground. The visual appeal of the site is limited. The location is, however, tranquil and valued out with the archaeology
Authenticity	High	3	An original monument in good condition with many surviving and original features. The value is specifically related to preservation in that almost all structural components are organic. Inorganic components, except small amounts of pottery, are not present. The site, however, has integrity as an original intact monument
Bequest	High	3	The informational value is demonstrably strong; therefore the potential legacy and bequest values are also strong. The bequest here is information about the past. As large parts of the post alignment are left *in situ* the site provides an intergenerational legacy. Without the preservation environment, however, the site would not survive and maintaining the wet nature of the site is therefore crucial to maintaining this bequest and legacy
Communal	High	3	This site represents the communal values of our ancestors and is illustrative of a shared effort; this site can therefore link together ideas of collective spirit and enterprise. The site has become famous locally and the on-going interest in the site suggests the local community has come to appreciate this aspect of its past. The land on which the site is located is also a community asset, and is owned by the town. This town land is a relict of the former common land
Cultural	Medium	2	Although this has come to mean the overarching value, in the sense of the publication from which this indicator was derived this value was thought to be about how a site engender is sense of communal and public worth. Here there is little to view on the surface however the site can still to a degree be publically understood

Economic/ Market	Low	1	The land is in permanent pasture, and has a lesser value than ploughed land in this arable-dominated area. There is pressure on land, and this area was once riverside wetland and has now been reclaimed and drained. It is however, unlikely that the site will be ploughed in the near future, as it is recognised as permanent pasture, and has ESA designation. The preferred state for land designated under the ESA scheme is wet or semi-wet grass. Part of the site is public amenity land, footpaths and the Yatch club so the land does have moderate income generation capacity and the riverside aspect may generate potential for future development. The monument has generated interest and has also raised the profile of the area. Pressure from conservation interest in the site may also be an economic factor
Educational/ Academic	High	3	Proven record in academic interest and information for the site is in the public domain
Emotional	Low	1	This site has been shown to provoke a good emotional response locally, but is not well known academically as yet. It is hoped that through publication of the excavation results, the site's profile will be higher in the future
Evidential	High	3	As a store of both artefactual and environmental data this site has high evidential value. It has power of place and cultural associations. The wet component provides a known dimension associated with the site. The value is proven through research, and is not just seen as a potential
Existence	High	3	The loss of this site after the amount of effort which has been taken to excavate and interpret it would be saddening. It also has a high bequest and inheritance value. The wet component is very important to the site's informational value, and to its current and future existence. But as the site exists fully below ground, much of the significance therefore relies upon an unseen preservation environment with good organic preservation. Further degradation of the burial environment would affect the existence value
Historical	High	3	An important site, with a formidable archive of wooden artefacts and palaeoenvironmental information. The site has integrity, strong evidential and information values. Identified in a local, regional and national context as important
Informational	High	3	The site's resource consists of exceptionally well preserved archaeological, palaeoenvironmental and geoarchaeological assets. The linkages through the floodplain palaeoenvironmental sequences immediately off site are also high. It scores highly through many informational linkages
Resource	High	3	High information and academic values, earth, combined with local interest suggest the resource value here is high

Recreational	Medium	2	Some recreational value, as part of local walking tours and riverside activity
Social/ Community	High	3	The site links the past with the present community. Because of its size and scale it also represents a large community effort by past communities. In the present, the archaeological site is well known and respected locally. The archaeological work was also carried out in the public eye and had a community component, through interpretation panels, local school visits, open days, community volunteers and so on. It is hoped that this will engender some local 'ownership', and respect into the future
Spiritual	Medium	2	The spiritual value of some sites is higher than others, particularly tombs or megalithic structures. Beccles is a very newly discovered site and has not yet developed a spiritual following or has any local traditions or myths. In archaeological terms, however, its potential association with ritual practice does provide some spiritual value and associations
Symbolic	Low	1	This site has little symbolic associations. It only has recognisable Iron Age association and local meaning: a symbol of its period

Totals	**Low = 4** **Medium = 3** **High = 10**	**40/51**

Table 8.17 A summary of Cultural Value indices

Similar to the other case study sites, the overall value of Beccles is high, although lower in some respects than the first two case studies (see Chapters 6 and 7). This is in part because the site is totally reliant on the preservation of organic material in a wet environment. Borough Fen and Sutton Common have a more tangible presence, through the structural elements of the sites, such as the upstanding earthworks and enclosures visible from the air. These would survive to some degree, even if the sites became totally desiccated. The wet-preserved archaeology at Beccles and the preservation environment are the dominant factor in the site's narrative. Loss of the wetland through desiccation and drainage could see almost total site destruction.

8.9 Assessment of Economic value

The analysis in this section is presented in line with the economic value diagram presented in Chapter 5 which depicted the cost scenario for archaeological preservation (see Figure 4.4). Two tables are presented below. The first outlines the economic inputs, positive values and current annual income (see Table 8.9); the second (Table 8.10) presents the negative costs associated with management.

Economic Inputs	**+ ve economic values**	**Annual income**
Cultural Value	Site rates highly	n/a
Land value	Variable: • Most Land held in common and sale value unlikely to be realised – Part rented as grazing land – Part rented to local amenity (Yacth club) – Town allotments • Private owner	n/a
Earning potential	• PPG16 development costs • Proven grant earning capacity • Defined by DEFRA as having high natural environment value (e.g. ESA, coastal and floodplain grazing marsh) • Land not currently in Environmental Stewardship but has earning potential	
Funding and grants	PPG16 s.106 (interpretation, public presentation) Higher Education and university grant English Heritage (Beccles project) total	£70,000 £5,000 £30,000 £115,000 £220,000

Table 8.9 A summary of Economic Inputs

Management Costs	**- ve economic values**	**Costs**
Assessment of value and significance	Value determined by initial excavation, so cost obligated under PPG 16 Further English Heritage grants for site assessment, hydrological monitoring and palaeo-environmental work Assessment total	n/a £115,000 £115,000
Development of Management Plan	not undertaken	n/a
Repair/restoration	Not undertaken	n/a
Land purchase	Land held in common	n/a
Offsetting farming income	Not in environmental stewardship	n/a

Table 8.10 A summary of Management Costs

There are currently few positive economic inputs or negative management costs represented here, as no specific action or intervention has been undertaken for the benefit of the archaeology. If management prescriptions were to be carried out, these are likely to require additional funding. Financial inputs may also be required to offset any potential losses in farming or rental income. If the management situation were therefore to develop, the economic inputs and management costs in the above tables would also change.

Additionally, as the land is not under an environmental stewardship agreement, there are no associated incomes for this. The Waveney Valley area is, however, eligible for stewardship. It has been identified by DEFRA as a priority area under the ESA scheme to protect nationally rare coastal and riverine grazing land (see Figures 8.4 and 8.5 above). Likewise for land values, there are no appropriate inputs, because the majority of the land is held in common by the town of Beccles. It is managed by the Town Council and is used for a variety of local uses, including public amenities such as the allotments and sailing club. The remainder is rented as grazing pasture by local farmers. The rental agreements and earning potential are not disclosed.

The costs associated with the site therefore represent development control obligations and third sector funding specific to the archaeological discovery. They are figures that relate to a point in time, and were triggered by development works in 2006. The figures involve statutory, educational and stakeholder funding. The first excavation was funded through a planning condition under PPG16. The second was undertaken with higher education funding for student training granted to aid understanding, to assess the site's value and significance and assess the preservation conditions.

Funding was also provided for the interpretation and public presentation of the site by the developer through the planning process. This is an obligation to provide additional monies for the improvement of local amenities through Section 106 of the Planning Act. This paid for interpretation panels, a local exhibition and public lectures and this, in turn, has contributed significantly to local knowledge and has engendered public 'ownership' of the site.

The most significant figures involved for the site are, however, the PPG16 excavation, and the baseline study funded by English Heritage.

8.10 Summary

Beccles was chosen as a case study because of the archaeological work that has been undertaken at the site. The approach taken was developed in response to the Strategy for Wetlands, and from lessons learnt at Sutton Common, in particular how to approach, value and assess a newly-discovered wet archaeological site. It is also a fully waterlogged site and, unlike Sutton Common and the Borough Fen ringwork, has no visible above-ground remains. Apart from a small inorganic component the material culture is entirely buried waterlogged organic material. This case study analysis therefore represents an understanding of the values associated with an assessment of a fully waterlogged site, but also about how to understand the significance of a new waterlogged archaeological site discovered through the development process.

The site was not known prior to 2006. It has therefore not been previously managed. The landscape has, however, remained relatively unaltered and this has been beneficial for the preservation of the organic archaeological remains. Relative stability in the land use since the drainage was introduced has aided the preservation of the archaeological remains. It is only recent changes, many of which are largely external to the local situation, that have begun to impact on the waterlogged remains. The emphasis of the management to date has been benign and remains essentially passive in nature. An informed look at the preservation through the recent baseline study suggests, however, that the more sensitive organic archaeological components, in particular the upper layers of wood, have been compromised by the land improvements and drainage over the last twenty years. The project identified that, in order to obtain a sustainable future for the waterlogged remains, some reversal of the current trend is needed. Although the project is yet to report fully, and no management prescriptions have been identified, maintaining higher water levels locally is likely to be a preferred solution. It has been demonstrated by the research at Sutton Common that re-wetting may not be able to secure the resource over the long term. The

excavations at Beccles undertaken through both the development control arena and funded by English Heritage were designed to provide considerable information and analysis about the form and function of the site. Although preservation by record is not considered as valuable as preservation *in situ*, in this case it will allow a reasonable archive to survive as a legacy and bequest to future generations.

The picture of land use and ownership are also complicated because of the site's linear nature. The impact of landuse and ownership along the length of the post alignment has also been explored in this work. This could present a conflict for any future management between surface ownership and land use, against the needs of the archaeology that lies beneath. This is one of the implications that would need to be dealt with for the future management to succeed.

In terms of significance, it can be demonstrated that the site has a high archaeological value. These understandings are derived from an analysis of the publically available data, such as the archaeological research, and also in terms of the national frameworks such as the MPP criteria (see Table 8.7). In terms of the analysis of its Cultural Value, it also scores well in a number of areas, namely in authenticity, bequest, communal, evidential, existence, historical, informational and social values (see Table 8.8). The survival of the material culture makes an important contribution to informational and evidential value. The nature of its construction and location on common land is likewise significant for social and communal values. The archaeological component such as the peat deposits and preserved wooden artefacts are, almost entirely organic. Although survival of rare waterlogged material means the site has additional cultural values, these elements of value are also more vulnerable. Once the organic component has degraded, there will be little left to represent the site. This differs to both Sutton Common and Borough Fen where the sites are also highly valued out with the wet components. Should the archaeology at Beccles desiccate and degrade, its value will decline very significantly.

In summary then, the assessment of values, through MPP and the Cultural Value criteria undertaken as part of this case study have been useful, in particular in looking at how a site comprised exclusively of waterlogged

organic remains differs from wetland sites that include additional archaeological elements. The conclusion must be that because the wet preservation adds considerably to its Cultural Value, should the Beccles site continue to degrade, its value will be very much reduced, retaining only its value as a location and place in the landscape. In terms of the management of the archaeological resource, the site is currently not sustainable. It is passively managed without any specific archaeological input. If this position were to improve then the economic value assessment, as presented in the tables above (see 8.9 and 8.10), would also increase. The land under which the archaeology survives has the capacity to earn funding from Environmental Stewardship. The income derived from these schemes could off-set the cost of the general maintenance, and could provide the economic balance in favour of sustainability. In Cultural Value terms the site is considered worthy of the investment that has been needed to assess the baseline conditions and understand value and significance. This is point-in-time funding, but the knowledge is likely to provide information to aid future management. It has also provided an archive of information so that if the resource degrades further, this work will still be available in the public realm.

Chapter 9 Analysis

9.1 Case study comparisons

The aim of this chapter is to draw out the themes that have developed from the discourse outlined in the preceding chapters. In particular, through analysis of the three case studies, it aims to show how an understanding of value has developed in the case of wetland sites. The intention is to widen this debate further and to explore whether it is possible to develop models to shape future investments through analysis of the findings. A summary of the case studies will be presented, followed in the latter part by the exploration of policy objectives, in particular economic value, preservation *in situ* and the idea of sustainability for archaeological sites in wetlands. To illustrate this conceptualisation, a number of theoretical models have been developed and will be presented and discussed.

The three case studies, Borough Fen ringwork, Sutton Common and the Beccles alignment are all Iron Age in date, but are very different archaeological monuments. What these have in common is their low-lying geographical location in which deposits have been waterlogged and preserved. Because of the wetland environment, these sites have significant potential for the recovery of components of the archaeological record that do not necessarily survive on other archaeological sites. Table 9.1 provides a detailed comparison of the three case studies, in terms of location, history significance and values

Site Name	Borough Fen	Sutton Common	Beccles Post Alignment
Region	East Anglia Fens	Humberhead levels (South Yorkshire)	East Anglia (Suffolk Broads)
Monument type (see MMP)	Settlement, Multi-vallate enclosure, earthworks, marsh fort	Settlement, multi-vallate enclosure, earthworks, marsh fort	Post Alignment, causeway
Date	Middle Iron Age	Iron Age, construction c 372 BC	Late Iron Age, construction spring 75 BC
Status	Designated (SM)	Designated (SM), Shirley Pool also SSSI	Undesignated heritage asset
MPP scores and priority	Not surveyed by MPP, but considered of National Importance Analysis suggests value is high	Not surveyed by MPP, but designated and considered of significance. Site scores highly in analyses of archaeological and cultural value	Not surveyed by MPP, but considered of National Importance Analysis suggests value is high
Cultural Value	High	High	High
Wet Potential	High	High	High
Archaeology	- Extant earthworks - Preserved inorganic and organic artefacts - wet ditch deposits - palaeo-environmental and geo-archaeological sequences - buried land surface	- Multi-period prehistoric material - Preserved in organic and organic artefacts - wet ditch deposits - palaeo-environmental and geo-archaeological sequences - buried land surface - burials evidence	- Linear structure, post alignment and wooden posts c. 400 m long - Preserved organic and in-organic artefacts - palaeo-environmental and geo-archaeological sequences
Archaeological history	- Fenland Survey, AP analysis - Small scale excavation	- Antiquarian work e.g. Whiting c. 1933 - Small scale excavation c 1987-93 (University of Sheffield) - Humber Wetlands Survey - Evaluation - Site becomes the focus of part of Sutton Common Project - Strip and Record excavation, monitoring, fully integrated palaeoenvironmental assessment	- Not known prior to 2006 - PPG16 excavation 2006 (SCCAS and University Of Birmingham) - Excavation in 2007 (University Of Birmingham) - Suffolk Rivers Project 2006-8 - Beccles project 2009 onwards. Research led excavation, baseline assessment and preservation analysis
Land use history	- Common Fen - Medieval to 18th Century reclamation - Construction of	- riverine/ channel wetland - early19th Century enclosure	- Common land held by town until c. 1722 Beccles Navigation Act - 18th Century drained

	Decoy Road - Pasture cover c.75% of the site - 25 % arable ploughed for 30+ years, now under pasture - Outlying earthworks and the site margins in arable - Significant surface drainage activity	- rough grazing pasture till 1980 - ploughed arable/roots for over 10 years - c. 1990 site purchased by CCT - Land managed as pasture under HLS grant	after river canalised c. 1722 - Rough grazing pasture till c.1980 - Improved pasture and local amenity land over 10 -20 years - land managed as semi-wet grazing - Site only discovered in 2006
Management history	- Designated as Scheduled Monument - 75% stable under permanent pasture, - EH Section 17 agreement to revert ploughed area - Now maintained under pasture through countryside stewardship - HLS also now in operation on surrounding land - No overall agreement or management for whole site - No access	- Designated as Scheduled Monument - Remained stable under permanent pasture, until drainage undertaken c. 1980 with MAFF grant - large enclosure bulldozed, small enclosure not ploughed and remained upstanding - Agriculture ceases c. 1990 when site purchased by CCT - land reverted to pasture through environmental stewardship - Drainage activity reversed and site maintained as wet pasture - HLS also now in operation on whole site and surrounding land - public access	- Linear site with multiple land uses - Overall activity has been passive - site remained undiscovered but stable under permanent pasture till 1980 - Land and drainage improved - Local amenity established on part of the land - Part of site cut by soke dyke for improved river drainage works in 2006 - Environmental Stewardship is an option but no overall agreement or management for whole site - No access
Current Management type	Passive.	Active - Management programme underpinned by research - Programmes of archaeological assessment, drainage management, and water table monitoring - Active in maintenance of water table - Some management specifically for archaeology and	Passive.

		some for maintenance of natural environment features, habitat, etc.	
Current threats	- Plough damage - Desiccation - Low water table - De-watering - Drainage	- Desiccation - de-watering - Drainage - Change of management regime in future	- Desiccation - De-watering - Drainage - Change of management regime in future
Efficacy of management	-Designation and passive management failed to protect asset - Earthwork now under better management and condition is good - Surviving wetland deposits are in poor and declining condition	- Designation and passive management failed to protect asset - Whole site now under active management and the condition is improving - Successful re-wetting and stable future - archaeological deposits still declining	- No overall management for archaeology - drainage has led to declining preservation conditions
Sustainability issues	- Long term survival of organic deposits unlikely - Stewardship may not continue	- Long term survival of organic deposits unlikely - Stewardship may not continue	- Long term survival of organic deposits unlikely - Better preservation at depth - Environmental Stewardship potential for the whole site

Table 9.18 Table showing a summary and comparison of the case studies, their land use, history, and management issues

In recognising that the iterative process of management seeks both to develop and to inform future management, a site's history and management are as important in some respects as its archaeological history. The table above presents summaries of the archaeological attributes, but also the management history and issues faced. The three sites, and analysis of the preservation potential of each, provided scenarios which could be analysed via a series of current value mechanisms. A summary of these value analyses is presented in the following sections.

The case studies used in this thesis can also be seen to demonstrate how reflective management processes have informed decision making. Each case study represents to some extent part of, or a stage in, the development of a framework (Table 9.2). Borough Fen represents a resource assessment, whereas Sutton Common is an example of a site which, through research, has

formed agendas for the future. The work undertaken at Beccles has benefited from the previous research and the management approach at Sutton Common, and represents the application of policy and strategy. It can therefore be seen to be putting the results of Sutton Common into practice. These, to some degree, represent past approaches, present practice and, potentially, future advances.

Case Study	Theme	Chapter	Paradigm
Borough Fen	Resource Assessment	Chapter 6	Past
Sutton Common	Agenda Formation	Chapter 7	Present
Beccles	Strategy	Chapter 8	Future

Table 9.2: Table showing case studies and their role in understanding research agendas

9.2 Value and wetland archaeology

The aim of the value analysis was to understand the process of assigning significance, and then to see how this kind of discourse has been interpreted for wetland archaeological sites. In particular, the research focused on how an understanding of value has widened over a period of the last 30-40 years. The process has developed from a relatively unsophisticated understanding that archaeological sites are important, to a position where there is recognition that the historic environment contributes to public wealth, has relevance for society and provides knowledge for present and future generations. In management terms, particularly under the influence of English legislation and policy developments, this process has become more involved. It has developed from a system of judgements based on the subjective values of individual archaeologists to a position where there has been a recognition that forms of standardised value criteria are needed, and this has been developed, in particular, to enable archaeological and historical assets to be ranked against each other to determine their relative values. Rank and value form the criteria which underpins everyday decision making amongst archaeological curators.

Site / Criteria (score)	Borough Fen Ring Work	Sutton Common	Beccles post alignment
High (3)	Period Rarity Fragility/ Vulnerability Potential **(Total High 4)**	Period Rarity Documentation Survival/ Condition Fragility/ Vulnerability Potential **(Total High 6)**	Period Rarity Documentation Survival/ Condition Fragility/ Vulnerability Potential **(Total High 4)**
Medium (2)	 Documentation Group Value Survival/ Condition **(Total Medium 4)**	n/a **(Total Medium 0)**	 Group Value **(Total Medium 1)**
Low (1)	n/a **(** **Total Low 0)**	 Group Value **(Total Low 1)**	n/a **(Total Low 0)**
Total	**18/21**	**19/21**	**20/21**

Table 9.3 Table showing a how the case studies scored against the MPP criteria

During this work it was established that few attempts have been made to value wetland archaeological sites in this way and, in particular, to establish if the attributes which are thought to make wetland sites more valuable than other types of material culture actually do make a difference to their significance or cultural value. The different variables that the case studies offered were designed to explore this issue in more detail, comparing earthwork sites with wet deposits and fully waterlogged archaeology, or comparing sites that have a comprehensive research archive with those that are preserved *in situ*.

In this study, the MPP criteria have been presented as the heritage sector's response to standardising the process for assessing importance and ranking monuments. This procedure dates from 1980s and 1990s and a comparison of how the case studies score against the MPP criteria and compare against each other is presented (Table 9.3).

This second type of analysis used in this work was an assessment for Cultural Value. This is very much a part of the current political and heritage management discourse and provides an understanding of the direction in which policy is heading. The results of the analysis are also provided in Table

9.4. This table is laid out in a similar way to the MPP criteria to show which factors they score highly on and then how they compare against each other.

Site / Criteria (score)	Borough Fen Ring Work	Sutton Common	Beccles post alignment
High (3)	Authenticity Bequest Educational/Academic Evidential Existence Historical Informational Social/Community Resource **(Total High 9)**	Authenticity Bequest Communal Cultural Educational/Academic Evidential Existence Historical Informational Social/Community Resource Recreational **(Total High 12)**	Authenticity Bequest Communal Educational/Academic Evidential Existence Historical Informational Social/Community Resource **(Total High 10)**
Medium (2)	 Communal Cultural Recreational Symbolic **(Total Medium 4)**	Aesthetic Emotional Spiritual Symbolic **(Total Medium 4)**	 Cultural Spiritual **(Total Medium 2)**
Low (1)	Aesthetic Economic/ Market Emotional Spiritual **(Total Low 4)**	 Economic/ Market **(Total Low 1)**	Aesthetic Economic/ Market Emotional Recreational Symbolic **(Total Low 4)**
Totals	**38/51**	**45/51**	**40/51**

Table 9.4 Table showing a comparison of the relative cultural value indicators by case study

It is clear that all the case studies concern significant archaeological sites and monuments in their own right. The wet components can be seen to add value, in the sense of providing supplementary elements to enhance our understanding of these as archaeological sites and as items of cultural capital. Better preservation of archaeological remains, and the rarity and information contained within them, enhances the value. However, those sites which have something more than the organic component, in this case represented by the earthworks at Borough Fen and Sutton Common, present a dichotomy in that

they highlight the issue of the sustainability of organic preservation. Both earthwork sites are not just valued because of the organic remains, but also because of the upstanding archaeology. If the preservation of these sites deteriorates, these will still continue to exist and will continue to have value in the landscape. For the site at Beccles, its entire value is intrinsically linked to preservation and is dependent on the survival of the organic components. Loss of resource also equates to a loss of value, of significance and ultimately of the site itself. This would include virtually all the material culture.

During the case study analysis, a further dichotomy was also highlighted for wetland archaeological sites, but it also perhaps applies to the archaeological resource as a whole. Many judgements, such as evidential or informational value, can only be determined through research and often the information comes from physical intervention. Physical interventions are also part of the strategy used by archaeological heritage managers to assess a site in order to determine its significance. This, however, can have a detrimental effect on the assets' integrity and authenticity values (or: potential and survival under the MPP system). These value judgements are based upon the intact nature of the site. It is therefore important to find a balance in the reflective learning process between research which informs value and policy, and those interventions which permanently devalue the resource and can lead to it not being considered as suitable for preservation, protection or bequest.

Because of the fragility and vulnerability of the environments in which wetland archaeological sites are found, striking this balance is particularly crucial. Providing information is essential to the reflective management process, yet incoherent intervention could damage the options for preservation *in situ*. Moreover, if preservation is found to have deteriorated beyond the point where sustainable preservation is achievable then preservation by record becomes the most appropriate option. One of the lessons from the work at Sutton Common and Beccles shows that the preservation potential at these sites is often fragmented, with some areas remaining waterlogged and likely to be well preserved, whilst other areas are at risk of desiccation. In ensuring that value is retained, there is a need to find the right balance. At Sutton Common and Beccles, this balance is between preservation *in situ* and preservation by record. Information about, for

example, the form of the sites, their function, date and composition, have been determined and their environmental context explored, but a significant portion of the sites remain preserved *in situ*. The record exists as an archive should preservation continue to deteriorate.

9.3 Preservation and economic value

A further theme emerged from this work is that economic value is important in furthering and understanding the management of wetlands. Therefore, the economic implications of this analysis also need to be discussed. The approach taken by the case studies was to weigh the balance of positive and negative economic costs, following an approach developed in Chapter 4 (Figure 4.4). In this diagram the balancing factors were the potential income (+ ve) and the management costs (- ve). The results are presented in Table 9.5.

Site Issue	Borough Fen Ring Work	Sutton Common	Beccles post alignment
Economic inputs	Section 17 agreement CS payments for reversion of pasture	HLF grant EH grant Other grants HLS payments for reversion	PPG16 Excavation Grant for interpretation
Management Costs	Offset of farming income from arable	Land purchase Excavation Monitoring Reversal of drainage	2007 Excavations 2009/10 Beccles project
Outcome	Overall net loss of value	Overall, no net loss of value	Value known but overall loss likely
Balance	**- ve**	**+ ve**	**Neutral**
Reason	Sustainable preservation of earthworks and inorganic deposits No preservation by record No long-term preservation of wetland deposits,	Sustainable preservation of earthworks and inorganic deposits Preservation by record No long-term preservation of wetland deposits, means those	Sustainability not possible Preservation by record achieved No long-term preservation of wetland deposits, means those

		deposits are likely to be lost?	deposits are likely to be lost?

Table 9.5 Table showing a comparison of the economic value issues, for the case studies

The economic value that was established for the case studies recognises that the cost of sustainability is a considerably more complex issue in reality than the model can allow. The balance between the positive and negative economic values is not just about providing physical measures for preserving an archaeological site, but is also about the inclusion of wider factors. This could include, for example, loss of revenue for the land user, the long term implementation and maintenance of a management plan, or the costs incurred by a transfer to a non-detrimental farming regime. If we consider the overall objective to be to achieve sustainable preservation *in situ* of our wetland archaeological sites, then the equation needs to include an understanding of the overall significance of an asset against its economic circumstances. This requires a judgement about a site's value and potential, versus the physical conditions for *in situ* preservation. The solution is also required to be cost efficient and have multiple benefits which reflect the wider environmental aspects as well as the needs of the archaeology.

9.4 Modelling sustainability

Although the case studies have been useful in providing figures for three comparable sites, the individual figures do not represent every wetland archaeological site in England. Nor can the scope of this investigation seek to understand the economic circumstances present across the spectrum of sites which are known to exist. What was, however, clearly recognised in this analysis is that mechanisms are needed which consider the role of the reflective management process, and also consider the context of policy, value, research and preservation in providing sustainability. Other approaches are also needed to allow comparisons of the values of an archaeological site in a wetland situation against the relative economic costs. From this recognition two overarching issues emerge. First, there is a need to understand the role of

the physical environment and the interaction of value in sustainability. Second, the need to understand the role of decision making in the management process, in order to identify the most effective point or method of intervention.

The next stage is to look at these issues in more detail, and the approach proposed is to develop a series of conceptualised models. The first set of models (presented in Chapter 9.6) has been developed to explore sustainability, and it recognises that the preservation of high value archaeology in wetland environments is only achievable under natural conditions, and that this represents the best-value. The opposite of this picture assumes that preservation conditions have deteriorated beyond the point where preservation is sustainable. This leaves a number of options; each of these has an economic or cost implication. Two further positions are also developed which are then played out against this baseline.

The second set of models (presented in Chapter 9.7) outlines a scenario of preservation decline, against which the issues of value and costs are established. The models recognise that interventions may be necessary and could potentially have a beneficial outcome on the site. This then brings the nature of decision making into focus. Three further models are presented in the series which explore the decision making process in more detail for wetland archaeological sites. The relevance of these models to the case studies is also discussed.

9.5 Preservation *in situ* and sustainability for wetland sites

It is recognised that preservation *in situ* is a tenet of archaeological policy in England (see Chapter 3.2). One of the key themes for this analysis is to develop an understanding of the management context for the preservation *in situ* of wetland archaeological sites. In particular, it is about ensuring a sustainable solution which enables the long-term survival of the resource. Preservation *in situ* embodies the desire to maintain or conserve a resource for future generations, in a sustainable manner, and achieving preservation *in situ* in the longer term is the aim of management. The need to achieve sustainability therefore underpins concepts such as preservation *in situ*. Sustainability is, therefore, perhaps of more significance for wetland archaeological sites than for other types of archaeology, because of the

reliance on suitable burial conditions that allow the preservation of organic remains. Whether preservation is either achievable or affordable is a considerable challenge in many situations. What this analysis has shown is that achieving sustainability for the preservation of wetland archaeological sites requires a combination of three elements.

Firstly, the physical conditions need to support preservation, ideally in the form of an intact or pristine wetland system, or at least one which is active and has conditions which work for the preservation of organic remains.

Secondly, the policy context needs to be in place to identify, understand and support the preservation of archaeological remains in wetlands. The case studies have identified that policy frameworks need to include the sort of reflective management process identified in earlier sections. The process needs to be underpinned by rigorous research to guide and maintain future preservation, but also by reflection-in-action to avoid 'technical rationality' (see Chapter 4.2). Policy must favour conservation of the resource and seek to understand and protect the whole resource.

Thirdly, there needs to be some form of *raison d' être* for the preservation of that resource, and this is associated with recognition of its value, both archaeologically and in a wider cultural context. It is implicit that it should be of sufficient value to equal the resource required for its preservation. Issues of policy and value were explored also in Chapter 4 (see Chapter 4.5), and through the three case studies.

Modelling sustainability for wetland archaeological sites

The preservation *in situ* and sustainability issues can be built into a series of four models (Figures 9.1 - 9.4). These models accept that there exists the potential to achieve a degree of sustainability, but if one of the areas of physical condition, value or policy is removed, then sustainability is only partially achievable. These models explore the need for balance, the interaction of value and the role of the physical environment in sustainability.

The first model (Figure 9.1) presents a picture where the right conditions exist for the sustainable preservation of a wetland archaeological site, where all conditions are right for a wetland archaeological site to remain *in situ*. The following models (Figures 9.2, 9.3 and 9.4) however, show an

unbalanced picture, where one of the three key elements is missing. These models represent different management issues, where the future survival of the asset is possible, but has not yet been achieved. Identifying or acting upon the missing element could help in choosing or developing the most appropriate management strategy. The final model is the opposite of the first, and presents a situation where sustainability is unlikely to be achievable. In each of these models a different action could be employed to achieve the best results for that site.

The second model depicts a situation where both the environmental and policy situations are favourable. However, if the site's value is not known or it cannot demonstrate a high value, the decision to provide support for preserving such a site may not be forthcoming. The site would therefore remain at risk. One of the management strategies to resolve or deal with this situation would be to seek a better understanding of the site's value, through investigative analysis and research. This is an example where targeted analytical research, such as the base-line assessment at Beccles, could provide the impetus for change.

The third model (Figure 9.3), presents a scenario where both the preservation is good and the site's cultural value is clear, but no guiding policy is in place to ensure preservation. In such a situation; there is an inherent risk that the site may become degraded because there is no policy or legislative framework to provide protection. Here again, the potential exists for sustainability but this has not yet been achieved. The solution would be to explore existing policy mechanisms and agendas, or to develop a specific policy strategy, to safeguard the preservation. Protection via existing legislation may also be an option although, as discussed for the case studies, designation has in the past not been able to prevent the degradation of Borough Fen or the partial destruction and desiccation at Sutton Common.

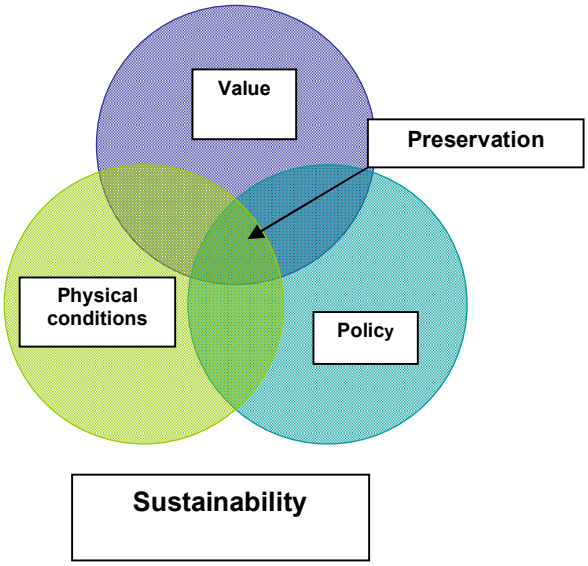

Figure 9.1 A model showing the three elements required to achieve sustainability

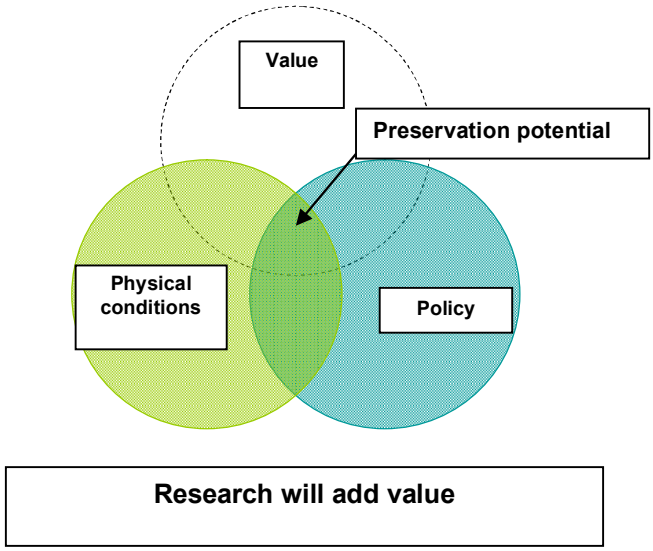

Figure 9.2 A model showing a scenario where preservation conditions and policy exist, but value is not appreciated. Research could add value

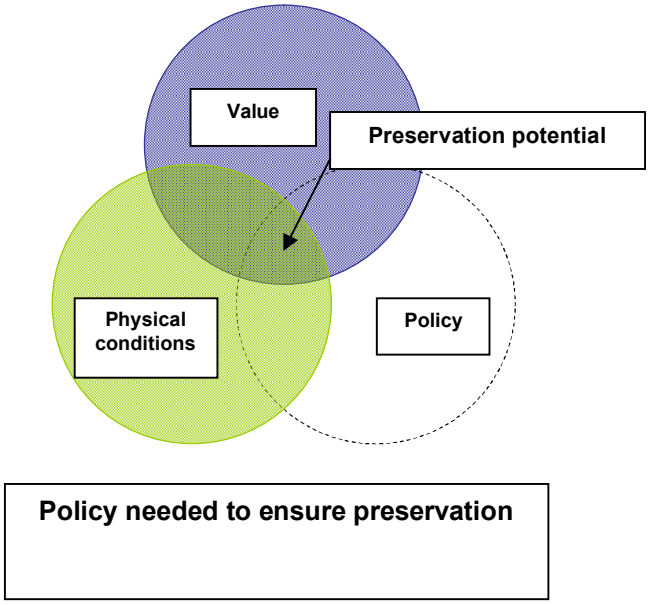

Figure 9.3 *Model showing a site with known values and preservation conditions but without management. Policy could provide sustainability*

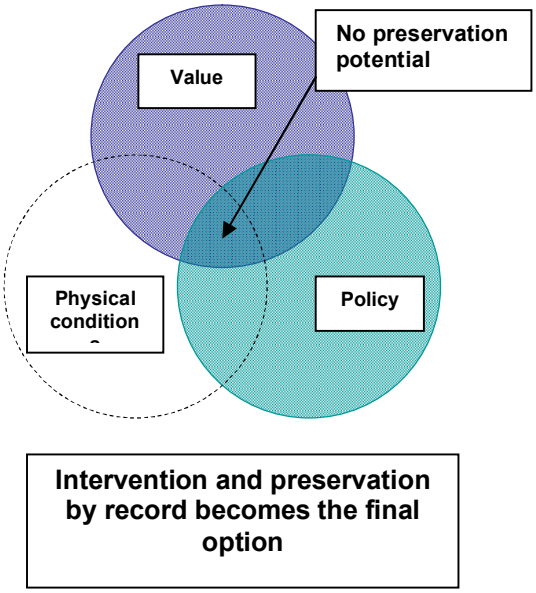

Figure 9.4 *Diagram showing a site where policy and known values exist but the preservation conditions are poor, the long term sustainability is therefore unlikely*

The fourth model (Figure 9.4) provides the scenario that cannot be altered in all of the models, and therefore represents a challenge for both preservation and sustainability. It is, in effect, the opposite of the model presented in Figure 9.1. It demonstrates that in some cases, even if policy and protection exist, and the site can demonstrate social value, but where the preservation conditions have failed or have been irreversibly altered, it may not be physically possible to preserve the site.

In this scenario it is necessary to accept that long-term natural sustainability is not viable. In archaeological terms this represents a choice intervention or decay of the site. Intervention could involve an engineering solution to alter the burial environment and improve the chance of *in situ* preservation, such as the reversal of the drainage regime at Sutton Common. However, preservation by record frequently remains the ultimate sanction in these cases. This scenario also represented the decision making process whereby the decision or tipping point is reached and intervention is required.

Modelling and the Case Studies

Comparing the four scenarios presented above (Figures 9.1to 9.4) with the case studies presents a number of difficulties. In particular, the physical process by which a site is 'discovered' has often been the consequence of a destructive process and many sites are likely to have been found through prospecting in peatlands or activities associated with drainage and peat cuttings. Other sites are found in former wetland areas which have already been converted for agricultural use. By contrast, a pristine wetland system is unlikely to have any known recorded archaeological sites, because the activities which provide opportunities for site discovery have been absent. For the model shown in Figure 9.1, the wetland which has the most suitable conditions for preservation is likely to have no known sites associated with it, as these remain invisible or fully buried.

The reality is therefore that none of the case studies can be directly attributed to one or other of the models described above. Each of the case studies, however, has some elements which are represented by one or other of the models.

Borough Fen

This is a site with a high value wetland component and is recognised as being nationally important. The current poor state of knowledge at the site means that it is not possible to determine the sustainability of the preservation environment, and whether it is good enough to preserve wet archaeological deposits *in situ*. The fourth model might be considered to provide the most positive approach. The site, however, survives as earthworks and the wetland component provides additional worth but does not represent the site's entire identity or value. In some respects, as long as the earthworks are preserved and under good management the site still has a degree of sustainability, although not necessarily with its wet deposits intact. New research could determine what the state of the preservation environment is, what archaeology is preserved, and whether it has a long-term future. The development of a programme of research at the site would appear to be the most appropriate action to take to understand the site, and it would also be necessary to undertake some analysis before it can be established whether the tipping point represented by Figure 9.4 has been reached. The scenario described in the second (represented by Figure 9.2), is therefore the most appropriate one to the current situation at the Borough Fen ringwork.

Sutton Common

Again, this is a site with a highly valued wet archaeological component and other archaeological attributes such as earthworks, but perhaps also a site where the tipping point set out in Figure 9.4 has already been reached. The site had previously demonstrated high preservation potential. During the Sutton Common Project research was also put in place to provide the site with an understanding of value and baseline analysis on preservation. The preservation environment across the site was, however, not good enough to protect the wetland archaeology and some form of intervention was required. The method chosen was to reverse the site's drainage and maintain a high water table across the land, whilst at the same time the water table was monitored for change and fluctuation. National, regional and local stakeholders were able to demonstrate a desire and will to preserve the site *in*

situ, with the result that agendas, policy and research were able to come together to provide a focus for the site's protection. By the end of the project however, a picture was emerging which suggested that intervention may not have been enough. The archaeological research provided a fall-back position in that an element of preservation by record was achieved. This again echoes the scenario presented by Figure 9.4.

Beccles

In many respects, Beccles could represent the scenario presented in Figure 9.1. It is a site which scores highly against the value criteria; it is also a highly significant nationally important wetland archaeological site. It has demonstrable preservation potential and for the present at least has a stable preservation environment. The high value has also been established through a programme of archaeological research. In some respects the baseline preservation factors that contribute towards sustainability have also been assessed, and its value, form, function and date have been ascertained. However, with a length of 400 m, the situation varies considerably along its extent, and includes differing soils and burial conditions, conflicting land use and different land owners. This site is therefore more suited to the model where the policy input is missing (represented by Figure 9.3). Reasonable physical preservation conditions exist and research has been undertaken, but no overarching policy or scheme has been implemented to protect the site and to preserve it. This policy would need to be an agreement between local landowners, users, managers and farmers in order to gain a consensus along the length of the site, and inter-agency co-operation to ensure optimum preservation conditions could be sustained.

Modelling sustainability:

The models represent a range of situations from sustainable preservation *in situ* to a series of theoretical positions where a specific type of strategy could be employed to achieve a management solution. The preservation environment provides the common theme that runs through all the models; however, it is the link between preservation and sustainability that depends so much upon a combined and balanced approach. To achieve

sustainability, management needs to include a good analysis of the archaeological resource, good policy making and clear understanding of value. The reflective management process, and the learning cycle are once again prominent in this process, particularly as both are essential for archaeological analysis and policy development. Cultural value and understanding or enhancing value is also significant here, and the case studies have all demonstrated that wet preservation can equate to having a high or higher than average cultural value. In particular, wetland archaeological sites in a natural habitat have the potential for better than average preservation of organic artefacts and palaeoenvironmental information. Although there are a number of ways by which to add value to an archaeological site, for example through education, outreach and the public understanding of archaeology, it is these evidential and informational aspects of wetland archaeological sites which provide the most additionality in value terms.

In some cases social perceptions may also have an effect on policy decision-making, and a site's political and social value may be to some extent as important to survival as its location, or physical conditions. The site at Flag Fen is a good example of this, as it has a high social value through its visitor's centre. The research, the publications and the museum have made this the (probably) best known wetland site in England. Other factors may also be considered here, such as the willingness of an organisation or group to take responsibility for a site, their attitude towards the issue of heritage, and responsiveness to heritage needs. An example of this could be a natural environment charity or trust, whose objective is to protect a wetland and manage it for its wildlife and bio-diversity, perhaps unaware of the preservation of archaic peats, the historic landscape and information value of that resource, or the potential to preserve other types of archaeology.

One theme to have emerged strongly is how to provide solutions to the scenarios explored in the fourth model (represented by Figure 9.4). In most cases, this would be through physical intervention. In theoretical terms at least, an archaeological site where preservation conditions can be artificially re-created still has the potential for sustainability. Achieving sustainability requires that the right physical conditions are recreated or maintained through

intervention or an engineered solution. There are many examples where this has been attempted, such as the installation of bunds at Wicken Fen in Cambridgeshire (see Coles 1995: 50), or the Sweet Track in Somerset, where the water level is artificially maintained at the site by pumps (*ibid*: 77). One of the case studies, Sutton Common, was chosen for this study at least in part because it is an example of a site where intervention has been attempted, though re-engineering of the drainage and artificial re-wetting. It was only partially successful and in spite of the intervention the preservation environment cannot be guaranteed. A full record of the site was made at the same time, so archaeologically at least preservation by record has also been achieved. In the cases of Sutton Common and perhaps also Beccles it seems there is a balance to be achieved between preservation of information by record, and preservation *in situ*. The considered opinion of the analysis undertaken at both sites suggests that the preservation environment is compromised and further interventions would be unlikely to achieve a better result. Nonetheless, a good record of both sites has been made for future generations to access, and there will be an archive to analyse in the future. The status of preservation by record as second best to preservation *in situ* must then be challenged for wetland archaeological sites, particularly those where sustainable solutions are no longer feasible.

9.6 Modelling preservation decline

Understanding decision making against declining preservation

Using a reflective approach as outlined in Chapter 4, and applying it to wetlands, is of benefit to wet-preserved archaeology because the decision making for new sites can be informed by understanding previous actions and processes. In this analysis, the second theme to have emerged from the analysis is that there is a greater need to understand the decision making process in regards to the need to intervene at sites where the organic material is declining, and the preservation environment is compromised.

It is possible to look at this in a more conceptualised manner by using a visual approach. This differs from the preservation *in situ* models (Figures 9.1 to 9.4) in that intervention represents a decision made at a point in time. This decision point must, however, be seen against the background of an

understanding of how an archaeological site in a wetland will behave over a longer period. This is about how archaeological remains that survive in the wetlands are affected and framed by time. The basic premise is that a site will decay over a period of time, which can be displayed as a trend line or curve on a graph, called here the 'preservation curve'. This line reflects the fact that historical assets and material culture will decay and deteriorate over a period of time although, in reality, there are a number of variables that affect preservation, and no archaeological site will decay or decline at a standard rate (see discussion below). For the purposes of illustration, however, a generalised curve is therefore considered most appropriate. The idea is to establish general decay trends, and to seek an understanding of the effects of intervention. The ideal outcome, if possible, would be to identify the right type of intervention needed and the point at which a balance can be struck between loss and preservation.

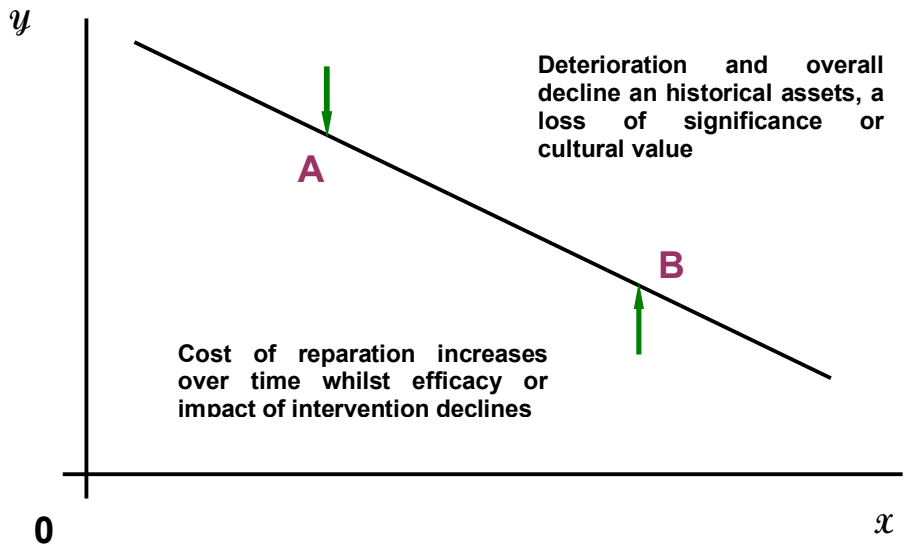

Figure 9.5 Graph showing the 'basic' trend line, or standard projected decay rate for an archaeological site (x = time and y = decay).

The graph represented in Figure 9.5 shows a standardised representation of the decay rate for a generic, non-specific archaeological site; the basic graph becomes a generic baseline by which to establish trends. The Y axis represents decay and shows a decline from the point when the asset in question becomes a known site, it could be when it becomes

unoccupied, or when it is first discovered and noted as an archaeological site. In a wetland situation it could be the point when it becomes permanently waterlogged or submerged. The trend therefore represents linear decay of material culture over a period of time. This discussion recognises that site formation processes and the forces that act upon decay are both complex and demanding subjects in their own right. It is however important to have a starting point when attempting to model preservation decay.

In terms of the analysis undertaken for this research, the Y axis can also represent deficiencies or loss in other key value areas. Looking at the value criteria for example (see Chapter 4.5, Tables 4.3 and 4.4) it is clear the loss of physical remains mirrors a decline in significance and cultural values. How potential decline could affect the various value criteria is indicated in Table 9.4.

The X axis nominally represents time, although like the Y axis, it can also represent other factors, in particular a monetary or economic position, and when a site begins to degrade, economic value can also decline (Table 9.6). The economic situation represented on the X axis here recognises that cost of the intervention is likely to rise over time, however as the asset deteriorates the value of that action also declines, in effect higher costs for fewer results. This is also the case for interventions to protect the archaeological site, where the actions are more expensive and/or concern a site or excavation of a lower value. Higher retrieval costs for the excavation would yield less material culture, so the informational, historical, and evidential value will be reduced.

Intervention can also be looked at in terms of existence values (see Chapter 4.4), in particular how much society, an organisation or an individual is prepared to pay to intervene to reverse or halt that decline. The cost of intervention needs to be balanced against its efficacy: the more valuable the asset, the more resources you might wish to allocate to the intervention. A decline in preservation and value over time is therefore at odds with the increased costs that might be required and this balance needs to be reconciled.

Type of Value	Effect on value of decline or deterioration in preservation and decay
Aesthetic	Loss of visual appeal due to a change of circumstances, or the decline in condition of an historical asset such as a ruin or building may result in a loss of appeal and a decline in this type of value
Authenticity	Loss of original material and repairs or replacements could result in loss of authenticity
Bequest	Loss or decline in historical assets means less to hand on to the next generation
Communal	Loss or decline of an historical assets results in a net loss in the historical fabric which belongs to a group or community
Cultural	Cultural value is the overarching concept, therefore loss of cultural value can equate to the loss of the resource as a whole
Economic/ Market	Loss or decline in historical assets could result in net loss of commercial value, either directly through monetary loss through looting or illegal metal detecting, but also loss as a marketable or functioning asset
Educational/ Academic	The resource would no long have an ability to inform or educate or provide material culture to enable learning or transfer of knowledge between generations or between past and present
Emotional	Palpable decline of the condition of an historical asset could also result in loss of affection or attachment by a community to an asset. Loss of an emotional response might also be reflected in loss of social responsibility for its survival or existence
Evidential	The loss and decline of evidential value is particularly felt on archaeological sites where the value currency is evidence of, and information about the past. Loss in this area can represent a decline in an asset's value
Existence	The loss and decline of existence value is another key factor in value. At one end of the scale total removal of a site would represent total loss of a site and a decline in value of 100%
Historical	The loss and decline of historical value, like that for evidential/informational values are particularly felt on archaeological sites because the credibility of assets is based on the source and significance of the information it represents
Informational	See evidential where for archaeological sites evidence and information can be interchangeable
Resource	No longer able to act in the capacity of a source or store of information for future generations
Recreational	Loss means the asset would no longer be able to perform a public role
Social/ Community	See both communal and emotional values, loss of community or social value can result from decline in status
Spiritual	If an asset is considered to have a particular spiritual value (see also symbolic below), and that representative part of the assets is lost e.g. religious symbolism, a cross or tower for example, then there will be a net loss of symbolic value as a direct result of the decline in condition
Symbolic	In a similar way to spiritual value (above), if the assets have a symbolic value or the representative symbolic entity is lost e.g. the stones at Avebury, or platform at Flag Fen then there will be a net loss of symbolic value as a direct result of the decline in condition

Table 9.6 Table showing how value indices are affected by decline or loss of an archaeological asset

The declining preservation curve as shown in these graphs deliberately does not meet or cross the X and Y axes. This is because it is unlikely that a

hundred percent of any site can ever be preserved or recovered, and it is equally uncommon that traces of material culture do not survive at all after a site has all but disappeared.

Modelling preservation decline and site intervention

To represent the interventions themselves, two examples are shown here, represented in Figure 9.5 by two green arrows marked A and B. These provide different scenarios along the curve. The intervention is symbolic rather than representative of any particular type of action, and could easily represent policy and research or other interventions such as management action or excavation. The consequences of the action are also explored.

Point A represents an early intervention. It could be, for example, in the form of a site assessment, detailed analysis, or archaeological evaluation. It could represent the recognition of a problem, or the trigger or decision point for action. By the time this point is reached on the Y axis, the value of the site has declined to an extent, but it retains significance and could still be considered or recognised as a valuable asset. On the X axis the intervention might also be considered good value because the significance and value of the asset are still high, and it therefore characterises good value and a good return. This investment could represent an opportunity for sustainability, preservation *in situ*, and positive management, but also excavation or preservation by record.

This situation can also be used to represent the decision making process. At point A on the graph, preservation and value are still balanced. Once this point is reached, a decision needs to be made whether preservation may have declined sufficiently to affect the site's value. This represents the decision point. The decision again does not immediately represent excavation, but could include the introduction of a positive management solution, such as further research or the development of a management plan. The key here is that investment early in the decay process presents more options for management. Conversely, where value and significance are low, and time is shorter, the options are more limited. Early decision making represents increased value, a good return on investment, and a higher chance of success of an intervention.

Point B represent the late stage intervention. Providing a *contra* point to the first situation, point B represents an intervention at a much later stage in the process. The mode of discovery, or the type of intervention may be the same but the decision making process is weighted by different factors. By this time both the value and significance of the resource have reduced, and the intervention comes later in the process of decline. Moreover, the solutions to ensure sustainability and preservation *in situ* could potentially be more costly, particularly if it constituted major repairs or complex engineering solutions. By this point, the value of the asset may have declined below the level that investment would represent a good return.

It must be made apparent that not all late-stage interventions are highly costly, and many plough damaged sites are for example regularly reverted to pasture with relatively low levels of investment (see Chapter 3.7, Table 3.3). The important point is however that there must be a balance, where the cost is not disproportionally high, and reflects the state of preservation, declining significance, and lower values. Likewise the key point when looking at the later stages of an asset's decline, when value and significance are low, the options for intervention are more limited. In terms of results, the consequences of late stage interventions are reduced value, particularly in evidential and informational terms, and a poor return on the investment.

Modelling preservation decline for wetland archaeological sites

The graph in Figure 9.5 represents a generic baseline which recognises that sites and material culture will decay in a linear fashion over time. With this diminishing preservation come other losses, including lowered significances and values. Intervention can be used to slow or stabilise the trend, or potentially provide an enhancement and therefore reverse the trend line but with advanced deterioration of the site, this is more difficult and more costly to achieve.

This basic model is relevant to a number of archaeological situations, but the picture for wetland archaeological sites is perhaps more complicated. There are many variables which affect the preservation of archaeological sites such as soil type, the types of material culture present, its robustness, and the preservation conditions. Yet it is the preservation environment itself that is the

key factor in determining a site's deterioration. The right conditions can therefore preserve a greater range of cultural material than elsewhere. Sustainability also depends upon these conditions being maintained.

A number of graphs are presented below, and represent different scenarios for wetland archaeological sites. As before, although each of the models was developed after the analysis was undertaken for the case studies, the presentation is more generic. It is designed to signify the value of research in order to understand the point at which intervention is most valuable and effective. Interventions or decision points are noted in Figures 9.6, 9.7 and 9.8 by green arrows; in Figure 9.7 the blue arrows represent events which change the *status-quo*.

Borough Fen Model

The Borough Fen graph (Figure 9.6) is a situation that is representative of many wet-preserved archaeological sites, and sites found in former wetlands, in particular many of those recognised during the wetland surveys of the Fenlands or Humber Wetlands. In these converted landscapes the archaeological resource has been subjected to drainage and desiccation over a number of years. Here, the material remains are identified some time after the site has begun to degrade and the organic components and the associated value indicators have already declined.

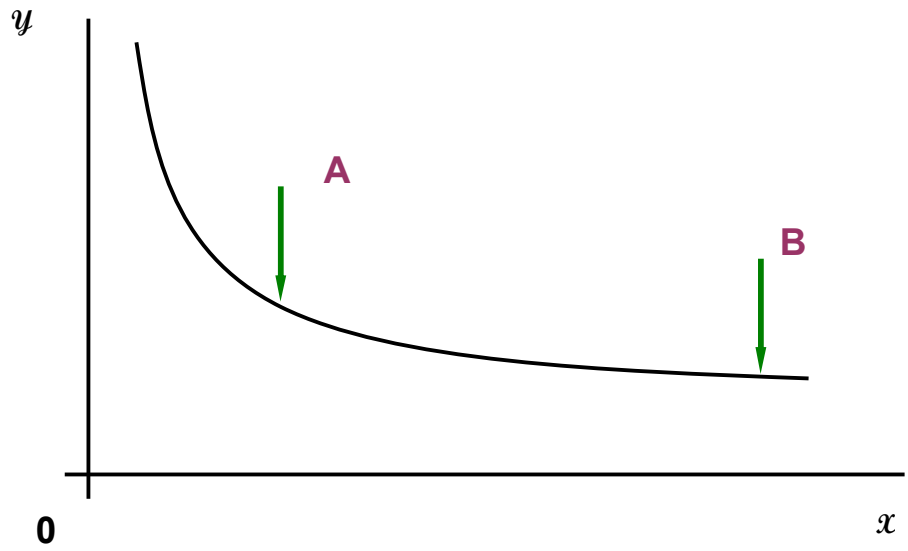

Figure 9.6 Graph showing a situation where decline in preservation is initially rapid, but stabilises (x = time and y = decay)

Decision making for these types of sites is less pressured, as the options are more limited. The material culture that does survive is comparatively stable, but the resource perhaps has a lower significance because wet-preserved aspects have already declined. Although the relative costs relating to an intervention may change between points A and B, the time taken may not necessarily result in any further loss of significance or informational value. This is considered to be representative of the first case study at Borough Fen, because it has been demonstrated that the management of the earthworks is stable and sustainable. The added value provided by its waterlogged aspect is however likely to have declined.

Sutton Common Model

The second model presented here (Figure 9.7) was developed from a theme identified during the case study research into Sutton Common. It was recognised that a number of events and undertakings had played a role in the decline of the preservation environment; each event had been followed by an episode of research. During each research exercise the preservation of the

archaeology had noticeably declined. The preservation curve is therefore shown to have been altered by events, which are followed by period of recovery or relative stability, however after each event the resources can be seen to have been damaged.

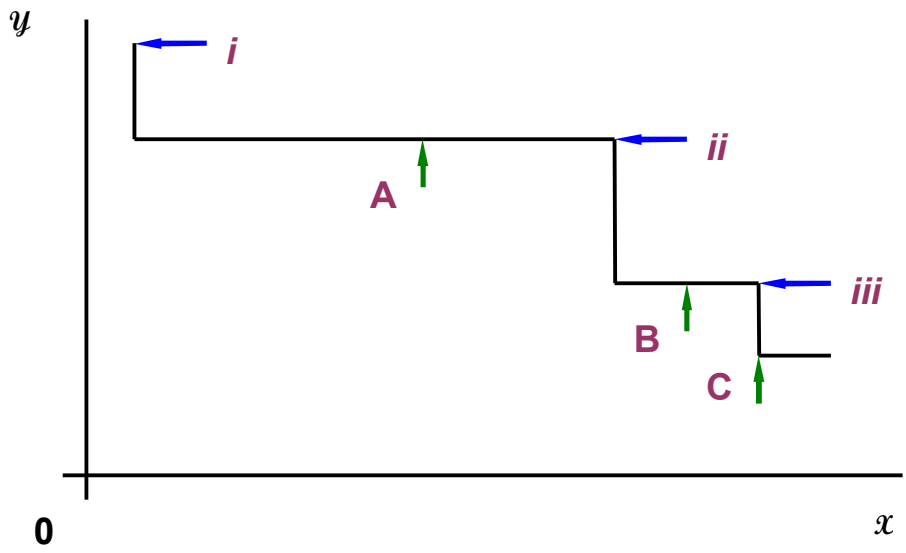

Figure 9.7 *Graph showing a situation where events trigger a period of decline, followed by periods of relative stabilisation (x = time and y = decay)*

This stepped model is also likely to be representative of other sites in England. Star Carr; in particular, comes to mind, with drainage, conversion to arable landuse and even archaeological excavations having potentially damaging effects on the preservation. As discussed, this graph was developed after the Sutton Common analysis, with the blue arrows representing:

i) enclosure and drainage in the 19th century,

ii) conversion to arable and land subsidence *c.* late 20th Century

iii) damage and MAFF sponsored drainage *c.*1980

The green arrows represent the archaeological research and include,

a) Whiting *c.*1930

b) Sheffield University *c.*1980s

Sutton Common Project *c*.2000 (including the restoration by CCT)

This stepped model shows how the site's informational value has declined in response to a number of external factors. After each event, when the site's environment has established a new equilibrium, the available value had been reduced. This could, for example, represent a particularly fragile part of the material culture that has diminished, or that organic elements nearest the surface or within the drainage zone had been affected. The Y axis, in this instance, could perhaps also represent depth, with the blue arrows marking the successive deepening of drainage.

The importance here is not necessarily in the case itself but in recognising that successive negative actions can have a reducing impact and can accelerate a site's decline. Identifying and reflecting on past management history is therefore important in the iterative process of wetland management in order to understand and identify the actions that have caused the decline. This information is useful in the identification of intervention or planning management for future.

Moreover, although archaeological practice may have developed over time, and the range of techniques has developed considerably, the cost of retrieving information may have increased. This is also reflected in the model by the X axis. At each intervention, the value declined but the cost increased. Although the final phase of archaeological work had revealed an immense amount and can be seen as a positive benefit for archaeology, the cost of this work was more than the previous two actions.

Beccles Model

The model shown by Figure 9.8 is another of the common threads with wet-preserved archaeological sites, in particular, how to inform the decision making process when a new site is discovered. One of the dichotomies identified with the sustainability issues noted in the second theme was about archaeological visibility in wetlands environments. A pristine intact wetland has high archaeological potential but the numbers of actual known sites is low. Wetland sites, in particular those which are fully submerged, are often discovered during an event which acts upon their environment. This graph

therefore represents the activities such as peat cutting in the Somerset Levels which led to the discovery of the Sweet Track or the drainage works in the fens that led to the work at Flag Fen (see Chapter 2). Likewise, in terms of this work, it also represents the situation at Beccles with the discovery of the post alignment during flood alleviation works.

At the point of discovery the *status quo* at the site is likely to change, and the discovery process introduces a change in environment which can lead to a rapid decline in the preservation. The arrows A and B represent different points in the decision making process and how the variables change over time. Point (A) represents early stage decision making and recognises that the value of the site at this point remains high. In contrast, at Point (B) where the decision has been delayed, the value has declined. The decision could be about a range of actions, intervention, management or evaluation, however the critical factor is about how, within reflective management, to introduce an understanding of time-critical decision making into a 'best practice' model.

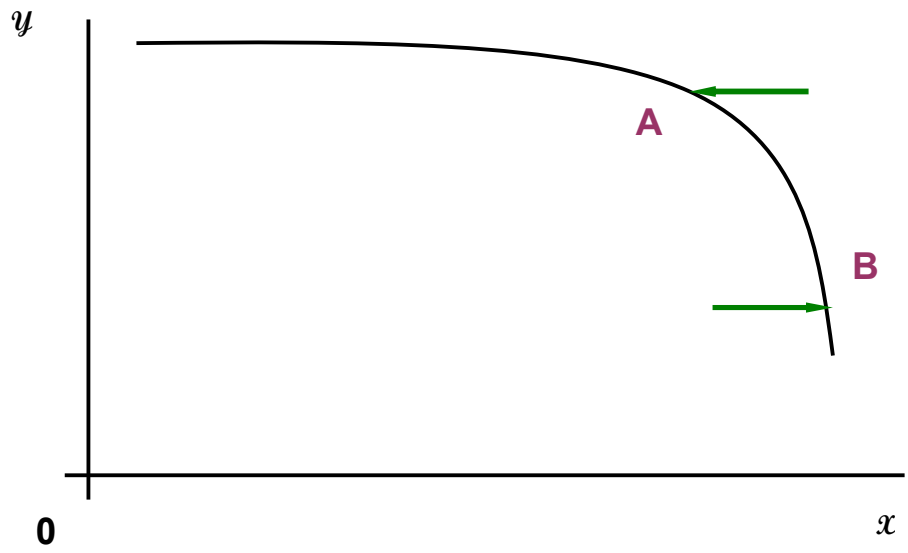

Figure 9.8 *Graph showing a site which remains well preserved for a period of time, once a change occurs however, the decline of significance and value is rapid (x = time and y = decay)*

During the analysis which came immediately after the discovery of the Beccles site, this issue was identified and recognised within the discussion, resulting in the immediate excavation of disturbed deposits.

Point A in Figure 9.8 could also represent the decision making point, whereby action is taken or implemented when the value or preservation declines to certain level.

9.7 Summary

Understanding values are very important in determining the right course of action for archaeological sites and are inherent in the reflective management process. This includes an assimilation of archaeological, cultural and economic value. Because wetland environments are fragile and unusual, the physical environment plays a different role in the management cycle than for other sites, and sustainability is only possible if the right, in this case waterlogged, physical environment exists. The management goals of preservation *in situ* must therefore be questioned, particularly where the management, research, policy or economic scenarios are not balanced.

In the end it must be recognised that intervention in wetland sites in some form is inevitable. The issue then becomes not necessarily a matter of what sort of intervention is required, but at what point intervention is most effective. This is important if the management of sites is to improve in the future.

Chapter 10: Conclusion

10.1 Management and the processes of deriving values

For the main conclusions to be drawn from this research, it is important to recognise that, in relationship to this analysis, reflective management is considered one of the theoretical principles of management, whether that is applied to archaeology or a number of other subject areas, most notably nature conservation. Reflective management is also considered to be a crucial component in any strategy for sustainable preservation. The theory of iterative and reflective processes both underpins good practice and helps define and improve future management. This is unlikely to be a controversial position and the process is manifest in management practice throughout the subject of archaeology, and has been used in the development of strategies, research frameworks, and management plans. What has, perhaps, been forgotten or less-well understood is that all the activities which constitute archaeological management, such as legislation, designation, analysis and policy, are part of the tools of the management process, and that learning, research and understanding are the ways to improve it. This cyclical process, in archaeological terms at least, is still likely to be the best way to manage sites. In particular, recent policy statements such as English Heritage's Conservation Principles and Policies document, with its focus on significance, have perhaps missed an opportunity to reinforce this link (see Drury and McPherson 2008). In wetlands this process is all the more important, given the fact that the archaeological resource represented here is in many respects more fragile and more difficult to protect effectively. In management terms, it is essentially harder to achieve sustainability in wetland archaeology than in 'dryland' archaeology, and there are also more variables to consider.

So how do the various tools fare in terms of assessment? The Research Framework was the first methodological tool to be considered, as it has become one of the more established approaches used in archaeological practice. To some extent, this approach embodies the learning cycle more explicitly than any other tool, as it is both interactive and has a well-understood developmental sequence. The process of creating the Research Frameworks involves resource assessment, which seeks to understand the current situation by looking back and analysing past activities and seeing how

knowledge has developed. It is also about developing an agenda, which seeks to influence policy, and develop better management and preservation through enhanced analysis. The overarching framework, therefore, brings together both 'reflections-on-action' and the learning cycle to develop a broad consensus. The process of development is often driven by a broad managerial and curatorial agreement, which has the potential to direct resources and drive the process of change. Research Frameworks could, however, be similarly criticised because these are not fully inclusive and are perhaps unrepresentative of the wider profession, despite the Frameworks having been designed to be democratic. These are still open to the bias of the archaeological sector and likewise do not always reflect the view of the wider public. In addition, there is not a full coverage across the country which can produce biases into the system. Moreover, frameworks are broad in approach, and because their overarching status is designed to guide activities, these are only able to provide general direction to areas or topics. The rapidly changing nature of the state of knowledge in relation to the archaeological resource means that the Framework documentation, to some extent, also becomes out of date as soon as it has been created. An important issue that is regularly debated in relation to the frameworks is how to keep the documents 'live', current and relevant.

Overall then, in terms of the wetland archaeological resource, Research Frameworks do not really help the active process of management, because, in many respects, these are historical documents and the topic-based approach does not cater for broader themes. The Research Frameworks such as those for the east of England have not really catered for the broader and more integral focus needed to understand wetlands topics. This was however recognised with the development of the MAREW project, and subsequently with the Wetlands Strategy. The strategy has provided overarching focus underpinned by the research from the MAREW report. This has however not developed into a more involved framework, and its influence has perhaps not been reflected in the development of the new regional frameworks.

The second process that was considered was the role of scoring and the process of defining value of the significance of an individual site or

monument, in particular, the process and criteria developed for the MPP. The scoring process and criteria were developed in an attempt to provide transparency in the designation process, and at the same time reduce regional, resource, period, topic and personal bias that was being reflected in the types of sites that received designation. Transparency of process and academic rigor were widely stressed in the development of the designation criteria and in the subsequent programme of reform. It was also, to some extent, a reflective process with knowledge and understanding of a site valued alongside the more traditional measures of importance such as condition, rarity and extent of survival. Whilst transparency and openness should be welcomed, the approach was still subjective. The designation process could be criticised, because it was led by archaeologists for archaeologists, and the element of public involvement was merely observational rather than participatory. Likewise the value that was derived from assessments was internally focused, comparing monuments with other type monuments, and there was no consideration of 'external value'. In addition, the process is very much a point-in-time-assessment, and does not account for decline or enhancement in values.

When looking at the MPP criteria in term of wet-preserved archaeological sites, it is important to take into account the nature of the resource, in particular the fragile and dynamic nature of the preservation environment, which means that alterations in condition are likely and values are changeable. All wet sites looked at as part of this work would seem, however, to score highly in this assessment, yet few examples of the most important wetland sites, such as Star Carr or Flag Fen, are scheduled. If they have been scheduled, such as Sutton Common, it is because of the presence of upstanding features such as the earthworks, rather than the exceptional anoxic preservation of material culture. A further criticism of the MPP is that, because this is a site-specific process, there is no role for scoring and protecting aspects of broader heritage, such as the landscape in which a wetland site is located. The landscapes may be integral to the site, or are brought together through a linked eco-system; the site is dependent on the wider landscape for its preservation.

The role of cultural value considered in this study was a way of approaching sites beyond the remit of internal archaeological value assessments. The approach followed the development of the ideas of cultural value within the field of economics where cultural components have begun to be looked at as items of capital worth or 'cultural capital'. Here, the main strength is the externality, as value can be assigned to assets in terms of their broader cultural and public interest. This can take these assets away from, and place them outside of, the narrow confines of their subject and small-scale localised comparisons. This is potentially useful for archaeological assets, designated or undesignated, as they can be valued outside of the subject and therefore are comparable with other aspects of the heritage sector. Cultural value also presents clear opportunities to widen the debate on heritage to the economic sector and link differing assets across wider mechanisms and, more broadly, across the pubic sector. The use of cultural value assessment is, however, relatively new in academic terms and has been established more as a guiding principle than for intra-site assessment. A number of authors have used different criteria for assessment and the process for scoring sites was found not to have been developed widely. The assessment of sites using cultural value remains untested and subjective, with the value of archaeological sites hinging on a number of specific criteria. Archaeological sites therefore tend to be over-reliant on informational, historical authentic elements for value. Likewise, many sites also lack the aesthetics of art, buildings or designed landscapes. It is also true that archaeology has been slow to embrace the social and communal values that other sectors, such as museums, have embraced.

Nevertheless, wetland archaeological sites score highly in term of cultural value. As is the case with other archaeological sites, much depends upon the known information and the state of preservation of the site. Wetland environments are, however, more likely to provide additional values to archaeological assets because of the potential to preserve organic cultural and palaeoenvironmental material. Sustainable management and the ability to preserve are therefore all the more important for these types of site. In terms of the reflective management process, cultural value also has a key role in providing lasting cross-sectional analysis of worth, but for wetland sites it also

serves to provide a mutual relationship, with value and sustainable preservation intrinsically linked.

The basis of the analysis provided for the scoring mechanisms examined is, to some extent, remote from the realities of many archaeological sites in rural areas. In terms of this study, it was therefore important to engender a more realistic perspective on the management of sites. For this reason, as well as for assessing the value of real sites throughout the case studies, it was important to recognise that for many archaeological sites the agenda is not set by value but by site economics. The stresses are common to many other sites and are generated by pressure on land for development and other issues relating to the agricultural agenda. Many wetland archaeological sites are situated in rural locations and for this study a mechanism had to be developed which seeks to explore farming values, because the income generated by land under arable can be viewed against that of pasture, whether that requires maintaining the *status quo* or a change in land use. The analysis shows that the process of incentivisation has become a major tool in the delivery of change, either by conservation farming or management agreements, and is widely accepted that for many archaeological sites this represents the best option for a positive change.

However, for wetland sites this is a difficult issue. Land use regime change brought about by incentivised agricultural policy, although positive in intent, is essentially passive in nature. Management does not set out to actively assess or preserve archaeological sites, but merely seeks to stop the most damaging activities from continuing. Simple reversion of arable to pasture is unlikely to stop desiccation or decay in a wetland context, and it must be understood that an active management regime must be employed to enact real change. Sustainability for the management of wetlands should therefore be seen as a balance between the costs of management to improve situation of site, and other management options such as preservation by record.

Overall, value assessment is a sound and useful tool in the management context as it seeks a reason for ongoing preservation. Externalising archaeology through cultural value also links archaeology in new ways to notions of social worth and bequest. It is important to understand

values in order to demonstrate to wider society, policy and decision makers why archaeology is important, and why sites need to be protected and managed. Value is, however, still reliant on knowledge, subjective resource assessment and point-in-time assessments. It must therefore be used in conjunction with more realistic mechanisms of assessment that take into account localised factors such as the site economics.

10.2 Case study analysis and the reality of the management of wet preserved sites

The three case studies examined were earthworks enclosures at Borough Fen and Sutton Common and a triple post alignment near Beccles. The site at Borough Fen is a small Iron Age earthwork situated in the fens. Previous work had demonstrated the waterlogged nature of deposits, and the high evidential potential of the site. Designated, nationally important and with a recognisably high value, it has also attracted management funding (Section 17) from English Heritage and from Natural England (Environmental Stewardship). Analysis of the management here shows that the approach is passive and protects the site from ploughing by off-setting the losses in farming income. Wider factors, in particular the fenland drainage, threaten the long-term survival of any waterlogged deposits. This provides significant conflicts of interest between the heritage management of the waterlogged archaeology and the maintenance of the arable landscape.

Although it can be demonstrated that the wetland aspects add value, ultimately the site also has power of place, integrity and an existence value as a surviving earthwork monument. In this instance it is my view that that the values of the wetland deposits can not compete with the values of the agricultural landscape, but the site can continue to be protected as a monument for other reasons and even though the wetland deposits degrade, there will be sufficient residual value to warrant on-going management.

Sutton Common is similar to the Borough Fen ring work in period and form. The site values were identified after extensive open area excavations undertaken in 2002 and 2003, built on the back of archaeological investigations dating back to the 1930s. Also designated and of national importance, it suffered from damage, agriculture actions and drainage. The

site was purchased by a charitable trust, with a large stakeholder partnership established to manage the site. The resulting excavations and investigative work provided a new understanding and analysis of the site and its environmental and social context. The evidence also provided a new understanding and improved analysis of the management of the site, with a focus on securing the sustainable preservation *in situ*.

In terms of value, Sutton Common is significant and has strong integrity and informational values with additional local meaning and social significance. The wetland aspects appear to add significantly to the overall informational and historical value, however, a similar situation exists here to that of Borough Fen, whereby an important earthwork monument retains importance, even if the wet-preserved archaeology had completely deteriorated.

The active approach to management in this case has provided a sustainable long-term future for the site as a whole, which includes natural environment habitats, placing the whole area under favourable landownership with local guardians. Nevertheless, the farming and drainage of the site has had a long-lasting impact, despite efforts to reverse the effects. The site and the stability of the organic material culture are therefore still at risk from desiccation. Similarly to Borough Fen, it is my view that that the values of the wetland deposits are important here, but if the wet deposits can not continue to be preserved intact then there will be enough residual value in the site and its earthworks to warrant on-going management. Preservation *in situ* is only partially possible, but enough information about the site is available in the archaeological record to support the notion that partial preservation by-record has been achieved.

The Beccles site is rather different to the other examples. Although it is also of Iron Age date, the triple-post alignment is a fully waterlogged site located in an active floodplain. The archaeology consists entirely of organic material with no earthworks or non-biodegradable finds. Moreover, nothing is visible on the surface. The relativly stable tenure and land use since the 18th century reclamation has meant that decay has been slow, with elements of the site preserved at depth. The area is, however, drained and the groundwater levels are controlled, resulting in a lower water table than is ideal for preservation. The site was discovered during development work, and

research was initially funded through a planning condition. The excavation strategy built on the insights gained at Sutton Common, and this sought to provide an understanding of form, date and context but also additional baseline data on the burial environment. It has not been designated, but compares well to the other case study and meets high-value criteria and shows the site to be a highly significant asset of national importance. The site is indicative of the influence that the evidential and informational nature of waterlogged sites has in increasing value.

In management terms, conflicts of interest exist between drainage, agriculture and land use interests with the resource, which threatens its sustainability in the long term. Multi-agency input would be needed to affect a change, but this is not currently feasible. However, because this area is an important habitat, things may change in the future. The site is entirely waterlogged, and if it were to degrade rapidly the whole value would also decline. The result of the early intervention by excavation means that, should management prove unsustainable, the site will be partially preserved by record.

A comparison of the case studies, including a summary of case history, values analysis, management issues and site economics was presented in Chapter 9. In conclusion however, both Borough Fen, and Sutton Common earthworks compare well overall and have a comparable set of archaeological attributes, against which the analysis of both sites can be assessed. They have each been subjected to published archaeological investigation, which has provided a baseline for the analysis. More extensive and modern analysis at Sutton Common has, however, greatly enhanced its value. In short, out-with the wetland deposits both sites have values which aid survival in a difficult management climate. The long-term sustainability of the wetland deposits at both sites may not be achievable. In particular, the work at Sutton Common has demonstrated that even with multi-agency co-operation, it is not always possible to guarantee *in situ* preservation. The economic situation at Borough Fen only allows for passive management, because the importance of the arable-dominated agricultural economy is likely to prevail over any attempt to re-engineer the drainage. It is important to recognise that the value of the site does not depend upon the preservation of organic material. However, as

a fully waterlogged site, the Beccles posts are more vulnerable. It is important to recognise that its significance has been markedly enhanced by the excavations which have provided knowledge research and established the site's full value. Yet this may not be enough to provide sustainable future without further investment in the short to medium term. Preservation by record as an outcome may therefore be the most appropriate response.

10.3 Conceptualising the management of wetland archaeological sites informing decision making

The assessment of site value and the case study analysis has emphasised that these approaches work best at different levels. There is, however, a gap between the theoretical discourse and the reality for the on-site preservation of wet-preserved sites. Research frameworks and value assessment exercises clearly have a major role to play in the broader decision making and policy development. The overall effect however on the ground may appear limited. The policies and the legislation which they underpin can be rigid and pre-determined in approach. The valuation criteria used for site assessment, particularly those which seek to provide protection, are likewise challenging as they often represent a point in time. The surveys and evaluation methodologies are not able to deal with a rapidly changing resource. Wetlands sites are therefore challenging because their value is not always apparent on the surface, and unlocking this information requires detailed research. Likewise, the exercise which is designed to give value can be rapidly eclipsed by changes in the preservation environment, and decline in burial condition could represent a decline in value. Much of this could occur with no outward (or surface) signs of deterioration

This issue for many of our wet-preserved archaeological sites is that decision making needs to be undertaken more quickly than for 'dryland' sites due to the fragility of the resource. Likewise, decision making needs to be developed from a bottom-up perspective, and driven by the needs of the individual site. Wetland sites are complicated and therefore the approach needs to be dictated by the local on-site conditions. The work at Sutton Common and Beccles has, for example, served to show that individual site

strategies work best. In particular, developing a model of site evaluation should be undertaken on a site-by-site basis.

The two themes that have remained constant throughout this process are the role of preservation *in situ* and the question of sustainability of wetland sites. These were the subject of the last section of the analysis, in particular the first set of models presented in Chapter 9, where the approach adopted was to attempt to conceptualise the approach to both preservation and sustainability in wetlands. For better or for worse, preservation *in situ* continues to underpin legislation and planning policy, and is therefore an established and defining principle. For this reason, sustainability is important if high bequest values are to be maintained. If this is not possible, preservation *in situ* for wet-preserved sites may not be a viable proposition. If sustainability is to be achieved for wetland sites then the approach to site management must recognise the individual site requirements.

The constant and defining factor in modelling sustainability is the physical preservation conditions, as it is the survival of the appropriate conditions that will define the efficacy of any solution. The other two variables in the models are policy and value. If either of these does not exist, then sustainability is likely to be compromised. It is also important to note that both policy and value can, to some extent, be discovered, defined or refined, whereas once the physical preservation conditions have diminished, reversing this position will be difficult. If a future economic model is to be developed, or new management strategies defined for the conservation of known archaeological sites in wetlands, then the physical elements must be considered first, even before value is assessed and policy prepared. The conclusion here is that all three of these themes need to come together for preservation *in situ* to be tenable in the long term, and for sustainability to be achieved.

The second approach taken was to conceptualise the approach to *in situ* preservation further by developing an understanding of preservation decline, with particular attention to the decision making process. It was recognised through the case studies that decline in preservation has a corresponding decline in value. As preservation conditions deteriorate, the factors which made a site important, particularly in those key determinants of

informational and evidential value, would also decline. A model was therefore sought to link the idea that preservation and value can deteriorate together. Other linkages were also apparent in this model. For example, if the costs of assessment was to rise over time, and value was deteriorating over the same period, the cost to value ratio would likewise decline. These models have a further usefulness in being able to introduce decision making into the management of wet-preserved sites, for example in determining the point at which intervention is most valuable, or whether a planned management intervention would offer a cost effective solution.

An ideal assessment process for sites should therefore be split into four main parts (see Figure 10.1).

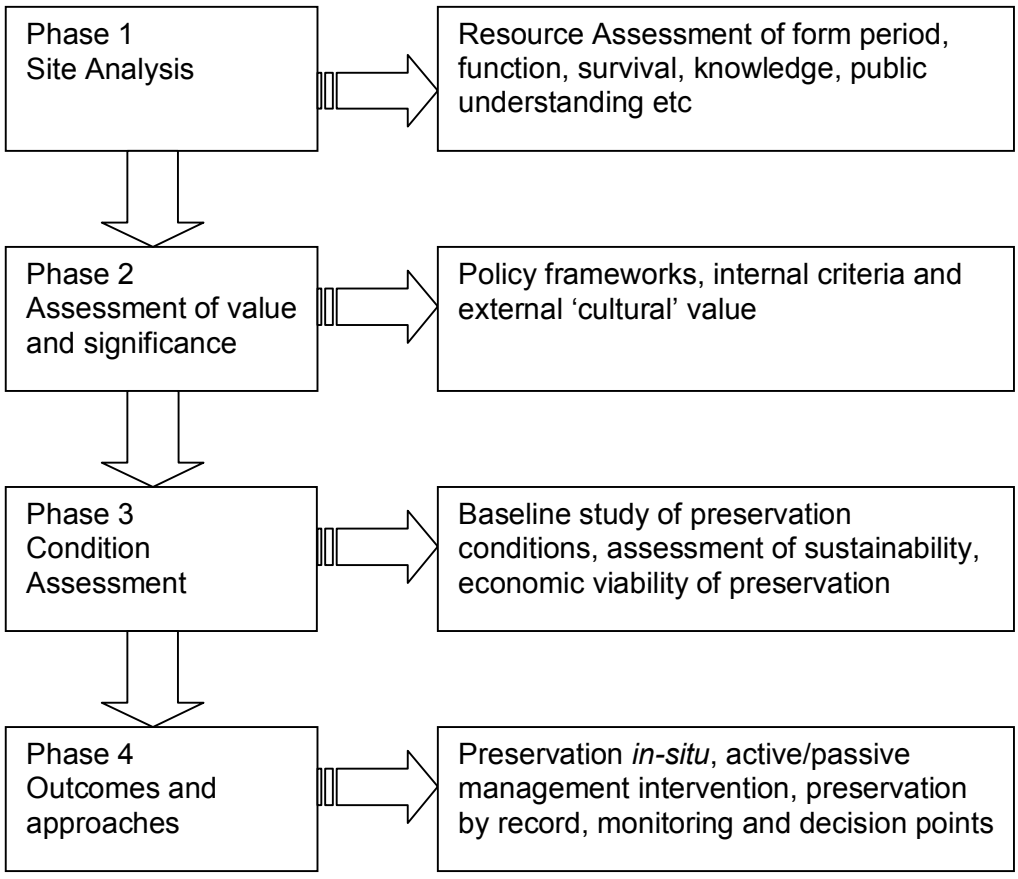

Figure 10.1: The assessment process for a management plan for a wet preserved archaeological site, based on the work at Beccles and Sutton Common

Each component is important in developing an understanding of the site and in developing levels of information to aid decision making. The outcomes are not defined but are developed as the assessment progresses.

Finally, in the Introduction to this work I presented two aims that this thesis would seek to address. The first aim was to examine whether the management framework that currently exists in England can provide a sustainable long-term future for wet-preserved archaeological sites. The examinations conducted for this research strongly implies that this is not the case. Whilst the existing management framework may be appropriate for 'dryland' sites, where the level of significance and condition has stabilised or where the variables that affect management are reduced, it does not offer a sustainable long-term future for archaeological sites situated in wetland environments.

The second aim was to provide a broader conceptualisation of the position of wet sites, through the modelling of sustainability, preservation and management decision making. This approach identified that the key element to preservation *in situ* of wet-preserved sites is the burial environment. This underpins both sustainability and decision making. Whilst value and policy are important elements of the management framework, archaeological sites with wet preservation without suitable burial conditions are unlikely to be preserved. Therefore, the decision making process becomes important in defining the viability of the outcome and the value of intervention.

The paradox that this work has identified is that the value of wetland archaeological sites is closely connected to the knowledge of these sites, but that increased knowledge results from damage to the burial environment. Thus, when the value of a site with wet preservation is at its highest level, opportunities for preservation *in situ*, whether underpinned by legislation or the planning system, is unlikely to be obtainable. All management options, including analysis, research and excavation, should be considered in a rigorous assessment process on an equal basis, and without the presumption for *in situ* preservation.

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